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PUBLIC INFORMATION ON WATER RESOURCES IN THE LAKE ERIE TRIBUTARY BASIN OF NORTHERN OHIO: CONTENT AND EXPOSURE

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United States Department
of the Interior

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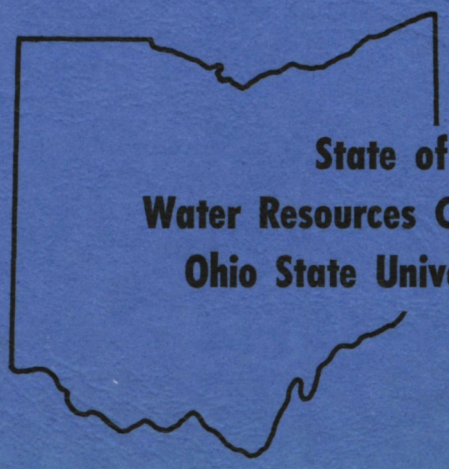

State of Ohio
Water Resources Center
Ohio State University

PUBLIC INFORMATION ON WATER RESOURCES IN THE LAKE ERIE TRIBUTARY BASIN OF NORTHERN OHIO: CONTENT AND EXPOSURE

by

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WATER RESOURCES CENTER
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THE OHIO STATE UNIVERSITY

July 1976

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PUBLIC INFORMATION ON WATER RESOURCES IN THE LAKE ERIE TRIBUTARY BASIN OF NORTHERN OHIO: CONTENT AND EXPOSURE

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The research reported here encompassed two separate but closely related parts:

(1) A field survey of a sample of heads of households, or their spouses, in the Lake Erie Tributary Basin of Northern Ohio to determine their sources of information about water resources in the region, their attitudes concerning these resources, and their use of them. The data for this part of the study were collected in early 1974, and the questions concerning water resource use pertained to the calendar year 1973.

(2) Content analyses to determine what information on water resources was available to these people locally from radio, television, daily newspapers, and government agencies during the calendar year 1973.

The study was made possible by a grant to Galen R. Rarick and Erik L. Collins, both of whom are members of the faculty of the School of Journalism at Ohio State University, from the Office of Water Research and Technology of the United States Department of the Interior, through the Water Resources Center at Ohio State.

Many other people also worked on various parts of the study, especially Graduate Research Associates Donald Beech, Robert Mazerov, David Fink, and Debra Duncan.

BACKGROUND

The authors proposed the studies reported here because it appeared to them that much of the discussion about people's use of, and concern with, the environment was based on hearsay and casual impression.

In fact, they found no truly comparable studies in a careful examination of:

Water Resources Abstracts, U.S. Department of the Interior, Vols. 3, 4, 5 (1970, 1971, 1972), and

Water Resources Research Catalog, U.S. Department of the Interior, Vols. 5, 6, 7 (1970, 1971, 1972).

The 1972 Water Resources Abstracts did cite three published studies that were tengentially related to the research reported here.

In one of these studies, T. F. Saarinen of the University of Arizona and R. U. Cooke of the University of London studied public perceptions of a wide range of environmental matters in Arizona. The researchers concluded that most people perceive environmental problems only when they are directly affected. They also found variations in the perception of problems to be related to socio-economic status and age.

J. H. Peterson and R. N. Friery of Mississippi State University studied watershed information and awareness of related issues among leaders of organizations interested in water resources development. A higher level of information about watershed issues was observed among leaders in towns than among leaders in rural organizations.

In the third study, Thomas E. Borton and Katherine P. Watner of the University of Michigan focused their research on means of achieving more effective two-way communication between planners and affected public in a comprehensive water resources planning effort. They found that workshops were especially good. The same researchers and William Wenrich reported essentially the same findings in a related study cited in the 1971 Abstracts.

The 1970 Abstracts cited a study that was somewhat comparable to one part of the research reported here. Charles A. Ibsen and John A. Ballweg of Virginia Polytechnic Institute studied public perception of water resource problems and sources of information. Only 3 per cent of the respondents volunteered a water matter as a major problem. However, 34 per cent said they had considered water to be at least somewhat of a problem. The most frequently mentioned water problem was pollution. Among people who perceived a water problem of some sort, 75 per cent said they had heard or read a discussion of water problems. Television was reported as a source of information on water more often than was any other medium. A majority of those respondents who offered a solution to a water problem thought more legislation is needed. A majority also thought that private citizens and federal agencies are primarily responsible for initiating solutions.

The 1972 Water Resources Research Catalog included description of a few studies then under way which were slightly related to the research reported here, but none had any real bearing on this study.

Perusal of Water Resources Abstracts and the Water Resources Research Catalog for years prior to 1970 showed that studies of communication concerning water resources were at that time practically nonexistent.

Considering, then, the paucity of relevant literature, the study reported here is in many respects exploratory and pioneering.

METHOD

The Field Survey of Lake Erie Tributary Basin Adult Residents

Sample

The universe to be sampled was defined as people age 18 and older who were heads of households, or their spouses, in 26 counties in Northern Ohio. In those rare cases where neither the head of the household nor the spouse was available, another adult member of the household was substituted. The counties were those in Ohio which are largely or totally within the Lake Erie Tributary Basin as determined by maps from the Ohio Department of Natural Resources, Division of Geological Survey.

The counties are as follows:

Allen, Ashtabula, Auglaize, Crawford, Cuyahoga, Defiance, Erie, Fulton, Geauga, Hancock, Henry, Huron, Lake Lorain, Lucas, Medina, Ottawa, Paulding, Putnam, Sandusky, Seneca, Summit, Van Wert, Williams, Wood, and Wyandot.

The 26 counties were listed in descending order of population, with all census tracts in them being numbered in serpentine fashion. A table of random numbers was used to select 80 tracts, keeping the number of tracts chosen from any one county approximately proportionate to that county's share of tracts in the universe.

Each of the chosen tracts (both urban and rural) was then divided into blocks, and a table of random numbers was used to draw a "starting point" block in each tract. Since

nsus tracts are approximately equal as to population, ght households were chosen from each selected tract, sulting in a drawn sample of 640 households. The method household selection required an interviewer to start at e northwest corner of the randomly selected block and en proceed in a clockwise direction around that block nd succeeding ones if necessary), choosing every fifth usehold until eight had been selected. (This method held uster effects to a minimum.) Obviously, in heavily pulated urban areas this required very little travel by e interviewer, while in sparsely populated rural areas it quired quite a bit of travel. However, since counties re represented in the sample in proportion to their pulation, most of the respondents were in such urban unties as Cuyahoga (Cleveland), Lucas (Toledo), and Summit kron). In order to break down "corner lot" bias in the mple, one-fifth of the interviewers started with the house the corner or the one nearest to the corner, one-fifth arted with the second house, one-fifth with the third use, etc.

For selection of the one respondent within the chosen usehold, quota controls were employed so as to result in e sample's sex distribution being approximately the same the sex distribution of the universe being sampled.

Data Collection

The data were collected by combining a personal inter- ew (in most cases) with a self-administered questionnaire, copy of which is attached. Once a sample household had en chosen in the manner described above, the interviewer livered the questionnaire to the person who was to fill in, explained the purpose of the survey, answered any estions the respondent had, and told the respondent when e interviewer would return to pick up the completed estionnaire. This allowed the interviewer to establish pport with the respondent, but saved time as against going rough a long interview schedule and gave the respondent chance to fill in the questionnaire pretty much at his or r own pace in privacy.

If the interviewer did not find anybody at home, a llback was made the next day. If there still was nobody home, the questionnaire was left at the front door nside the screen or storm door if there was one), with a ver instruction sheet telling who was to fill it in, what e objective of the study was, who was conducting it, and en the questionnaire would be picked up.

In case the respondent was out at the time of scheduled pick-up, he or she was left a stamped return envelope with instructions to mail the completed questionnaire to the researchers. Similarly, if the intended respondent had not filled in the questionnaire when the interviewer returned to pick it up, he or she was given the stamped return envelope and was asked to fill in the questionnaire and mail it as soon as possible.

The questionnaire had been developed through a series of four pre-tests, including personal interviews, mailing, and the put-and-take method actually employed in this study. After each of the first three pre-tests, changes were made in the questionnaire, and the final pre-test convinced the researchers that the instrument would gain the information that was needed.

Interviewers for the study were sought through classified advertisements in newspapers published in the counties which fell into the sample. After applications had been received, the best-appearing prospects were interviewed in their home towns by two of the researchers, and the best ones were hired and trained in working sessions.

The questionnaire was composed mostly of closed questions, with a few open questions on matters which, the pre-tests showed, did not lend themselves well to closed questions. The response categories for the closed questions were developed, for many items, from responses to open questions in the pre-tests.

Data Analysis

After the data were collected, a content analysis of the responses to open questions was made. Responses to all questions were then coded and punched into cards. Then machine runs produced number and percentage distributions on all items and bi-variate cross-tabulations of selected items. The cross-tabulations were run in order to determine relationships among demographic variables, water uses, media use, and attitudes concerning water resources. Since most items produced nominal data and many others produced ordinal data for which the magnitude of the intervals could not be established, the Chi-Square test of association was employed in the cross-tabulations.

The Analysis of Mass Media Water Resources Content

Newspaper Stories and Photographs

In order to learn what information on water was available to residents of the Lake Erie Tributary Basin in Northern Ohio via mass media, a content analysis was made of newspaper news stories and features, letters-to-the-editor, government publications, and radio and television newscast scripts.

Obviously, it was not possible to analyze every newspaper published in the area during 1973 or every radio or television newscast. Consequently, probability and purposive samples of media content were designed.

For the newspaper, television, and radio analyses, four constructed weeks (one for each season of the year) were drawn. That is, by using a table of random numbers, the researchers drew one Sunday, one Monday, one Tuesday, etc., for each season of the year. The dates of each of the constructed weeks for 1973 were as follows:

Winter

Sunday, January 7
Monday, March 12
Tuesday, January 16
Wednesday, January 24
Thursday, February 15
Friday, March 16
Saturday, February 3

Spring

Sunday, May 20
Monday, June 18
Tuesday, June 12
Wednesday, May 2
Thursday, April 26
Friday, June 1
Saturday, April 7

Summer

Sunday, August 12
Monday, July 16
Tuesday, September 18
Wednesday, July 11
Thursday, September 6
Friday, August 3
Saturday, September 22

Autumn

Sunday, October 21
Monday, October 15
Tuesday, November 27
Wednesday, December 12
Thursday, November 29
Friday, November 23
Saturday, December 15

Nine daily newspapers were selected to be analyzed for the sample dates. All five of the dailies published in the three largest cities in the Basin were included, because those cities contain most of the people and because the five papers had 74% of the combined weekday circulation of all 34 dailies in the region.

Furthermore, the three Sunday papers published in Cleveland, Toledo, and Akron had 84% of the combined Sunday circulation for the Basin.

Even though the five papers from the three big cities had most of the newspaper circulation in the area, the researchers decided to include a few of the smaller dailies in the Basin so as to make the final sample even more representative of newspaper content in the region. A table of random numbers was used to draw five of the remaining 29 daily newspapers that were then published in the Basin. As it turned out, however, contrary to what the researchers were first told, one of the papers was not available for a substantial part of 1973 either by subscription or microfilm or at the newspaper office. Consequently, that paper was not included in the study.

The nine papers that were analyzed for the sample dates, with weekday circulation (to the nearest thousand) for 1973 were as follows:

Cleveland Plain Dealer -- 403,000

Cleveland Press -- 374,000

Akron Beacon Journal -- 173,000

Toledo Blade -- 173,000

Toledo Times -- 30,000

Findlay Republican-Courier -- 25,000

Defiance Crescent News -- 17,000

Bucyrus Telegraph Forum -- 8,000

Wapakoneta News -- 4,000

Graduate research assistants were trained to go through the sample papers, measuring total newshole (non-advertising space), and coding each item that pertained to water on each of six dimensions. These dimensions and their coding categories were as follows:

Locale of story:

1. Story relates directly to Lake Erie Tributary Basin of Ohio.
2. Ohio, but outside the Basin.
3. United States, but outside Ohio.
4. Outside the United States.

Subject of Story:

1. Government -- including federal, state, local.
2. Recreation -- swimming, boating, skating, fishing, etc.
3. Disasters -- storms, floods, drownings, ship sinkings, etc.
4. Facilities -- ports, harbors, beaches, etc.
5. Water supply -- domestic uses, both human and animal.
6. Flood control
7. Hydroelectric power
8. Water pollution
9. Aquatic life
10. Commercial shipping
11. Territorial water limits
12. Naval power
13. Offshore minerals
14. Irrigation
15. Other

Source of Story:

1. No attribution
2. Business
3. Government
4. Consumer
5. Public service agency -- Red Cross, Salvation army, etc.

Length of Story:

Number of column inches.

Basis of Story:

1. Event -- such as disaster, meeting, fishing, public hearing, etc.
2. Non-event -- such as a report (that does not derive from an event) concerning an ongoing condition. For example, an article about the degree of pollution in a lake, its causes, history, etc.

Direction of Report:

1. Event or condition is socially desirable. For example, water supply rated healthful, fishing is good this week, river being cleaned up, etc.
2. Event or condition socially undesirable. For example, all disasters, accounts of water pollution, drought, etc.
3. Neutral or unclassifiable. For example, a listing of the hours that the city water department business office is open, or an item that reports desirable and undesirable events or conditions equally.

Photographs and cutlines were coded separately from stories but in the same manner.

The coding categories were developed during the pilot study, making them realistic in terms of the things that were actually reported in the papers in the Lake Erie Tributary Basin. Once the categories had been developed for each dimension, a subsample of content was coded by two coders working independently. Percentage of agreement was then computed for each dimension as an estimate of inter-coder reliability. Once reliability of the coding system was established (inter-coder agreement ranged from 97% to 88% on the six dimensions), coding instructions were written out (see appendix) and the coding was done.

Letters to the editor in the same sample of newspapers were analyzed in much the same way as were stories and photographs. Each letter concerning such an issue was also analyzed as to the reason, as best it could be determined by reading the letter, the author had written it.

Television Newscasts

Rather than try to analyze the newscasts of all 13 television stations that were then on the air in the Basin, the researchers selected a stratified probability sample of six stations. The 13 stations were stratified by number of full-time equivalent members of the news department, and then every second station was selected, using a randomly chosen starting point. One of the selected stations declined participation, so a station that had almost the same number of news staff members was put into the sample in its place.

The six stations included in the study were as follows:

WKYC-TV, Cleveland, 58 news staff members, owned by NBC.

WJW-TV, Cleveland, 24 news staff members, CBS affiliate.

WSPD-TV, Toledo, 20 news staff members, NBC affiliate.

WTOL-TV, Toledo, 17 news staff members, CBS affiliate.

WAKR-TV, Akron, 7 news staff members, ABC affiliate.

WBGU-TV, Bowling Green, 3 news staff members, operated by Bowling Green State University without commercial network affiliation.

As a pilot study, researchers analyzed the local newscasts of a station not included in the sample. The analysis employed five of the dimensions (and the same sets of categories on these dimensions) that were used in the newspaper study: Locale, subject, source, event vs. non-event, and direction of

social desirability. Instead of the column-inch space measure, however, length of story as to number of seconds it took on the air was the sixth dimension on which it was coded. The pilot study established inter-coder agreement in the same high range as for newspaper stories.

At the start of the pilot study, a system of coding the visuals that were used with each story was employed. However, as might be expected, it was found that this extra work added nothing to the data as far as the objectives of this study were concerned. Suffice it to say, almost every story was accompanied by visuals that were congruent with the spript on the dimensions analyzed in this study. Consequently, the time-consuming analysis of visuals was dropped, and only the written scripts were analyzed.

After the pilot study was completed, a member of the research staff spent one or two days at each of the stations in the sample, analyzing the scripts of all local newscasts for the same four constructed weeks that were used in the newspaper study. He also recorded the times of network newscasts that were aired by each station on the sample dates. The researchers obtained the Television News Index and Abstracts for 1973, published by the Television News Archives at Vanderbilt University, and analyzed the network newscasts that were broadcast by the sample stations.

Radio Newscasts

Local newscasts on radio stations were analyzed in the same way that television newscasts were.

In selecting the sample of radio stations, all 85 stations in the Basin were listed, stratified by daytime power of transmission. From a randomly selected starting point, every eighth station was chosen. However, one of the 10 stations (not unexpectedly) had no locally produced newscasts, so it was dropped from the analysis. Another one of the stations had recently undergone considerable change of personnel, and even though the people there were cooperative, it turned out to be impossible (after a few months of trying) to come up with enough of the newscast scripts from the sample dates in 1973 to make meaningful analysis possible.

Consequently, the eight stations for which local newscasts were analyzed, and their daytime transmission powers, were as follows:

WJW, Cleveland, 10,000 watts.

WIXY, Cleveland, 5,000 watts.

WREO, Ashtabula, 5,000 watts.

WRIN, Findlay, 1,000 watts.

WLRO, Lorain, 500 watts.

WLKR, Norwalk, 500 watts.

WGLX, Galion, 250 watts.

WERT, Van Wert, 250 watts.

Since there was no radio equivalent of the Vanderbilt Television News Archives, and since the researchers could not monitor the sample stations, network newscasts were not included in the analysis.

The same researcher who analyzed the television news scripts visited the sample radio stations and analyzed the local newscast scripts.

Government Publications and Films

The researchers obtained all the government publications and lists of films that they could find which concerned water and were available to the public in the Basin during 1973. Most of these publications were made available by the Department of Natural Resources of the State of Ohio.

These publications and films were analyzed in the same way as were newspaper stories, radio newscasts, and television newscasts except that each item was coded as a unit, and no measure of length was employed.

FINDINGS: Survey of Adults

Usable questionnaires were obtained from 456 of the 640 adults in the drawn sample. This is a completion rate of 71%, which is acceptable for a lengthy questionnaire when a demographically heterogeneous and geographically dispersed population is being surveyed. This rate of return was achieved only through two callbacks (where necessary) by interviewers and the mailing of a reminder to those people who had not returned the questionnaire even after those callbacks.

Naturally, many of the population estimates are based on samples of 456. However, when the sample is divided on such a characteristic as sex or education or income, the subsamples will be smaller. The chart below shows the approximate width of 95% confidence intervals for a range of percentages based on three different sample sizes.

Sample Size	Percentage Obtained	95% Confidence Interval; % plus-minus
456	40 to 60	5
	20 to 30 or 70 to 80	4
	10 or 90	3
300	40 to 60	6
	20 to 30 or 70 to 80	5
	10 to 90	3
200	40 to 60	7
	20 to 30 or 70 to 80	6
	10 or 90	4

For example, if 50% of the 456 respondents said they like ice water, the chances are 95 out of 100 that the value for the Basin's entire population of household heads or spouses, had it been measured in the same way, is between 45% (the obtained % minus 5) and 55% (the obtained % plus 5). Another example: If 90% of 300 boating enthusiasts said they think Lake Erie is beautiful, then the chances are 95 out of 100 that the value for all such adult boating enthusiasts in the Basin is between 87% and 93%.

As shown in Table 1, about two-thirds of the respondents in this study were between 25 and 54 years of age, 86% of them were caucasion, and 70% lived in households that had between $5,000 and $19,999 total income in 1973. Two-thirds of the respondents were employed outside the household, the others being housewives, students, retired or unemployed. There were slightly more females than males in the sample, and 78% had completed high school or more education. (Some 33% had at least some college, with about one-third of them having at least a bachelor's degree.)

As shown in Table 2, picnicking at lakes and rivers and swimming were the most popular water recreation activities in Northern Ohio. Some 51% of the respondents said at least somebody in their household went picnicking at lakes or rivers during the year, and 57% said at least one member of the household went swimming. Swimming was done more frequently than was picnicking, as 31% said members of the household went swimming eight or more times during the year, while the comparable figure for picnicking at rivers or lakes was 8%.

Fishing (43%) and boating (32%) were the other popular water recreation activities in the region, with fishing done eight or more times by 17% of the households, compared to only 7% for boating.

Table 3 shows that Saturdays and Sundays were the most popular days of the week for water recreation. About 48% of the respondents said some member of the household participated on weekends, and 32% said they themselves did so. The table also shows that other members of the household were more likely than the respondent to participate in water recreation at any time. This probably reflects two things:

(1) About nine out of 10 respondents were household heads or their spouses, so they may have had less time for recreation of any kind than did their children or other young members of the household.

(2) In any household of three or more people, the respondent was "outnumbered" by at least two to one, so the opportunity for water recreation by "others" was greater.

TABLE 1 -- Demographic Characteristics of Sample (n=456)*

	No.	%
Age (n=436)		
18-24	35	8
25-34	83	19
35-44	103	23
45-54	109	25
55-64	60	14
65 or older	46	11
Sex (n=432)		
Female	219	51
Male	213	49
Race (n=406)		
Caucasion	348	86
Other	58	14
1973 Household Income (n=358)		
Under $5,000	35	10
$5,000 - 9,999	57	16
10,000 -14,999	115	32
15,000 -19,999	78	22
20,000 -24,999	41	11
25,000 or more	32	9
Occupation (n=387)		
Professional	38	10
Proprietor, manager	64	17
Clerical, sales	44	11
Craftsmen, foremen	44	11
Laborers, service workers	56	15
Housewives, students, retired	141	36
Education (n=421)		
Elementary school	25	6
Some high school	66	16
High school graduate	161	38
Technical/vocational beyond high school	29	7
Some college	89	21
Bachelor's degree or more	51	12

*The number of respondents giving no answer ranged from 20 on age to 98 on household income.

TABLE 2 -- Frequency of Participation in Various Water Recreation Activities in Northern Ohio in 1973 by Respondent or Members of Household (n=456)

	Never		1-7 Times		8 or More	
	No.	%	No.	%	No.	%
Boating	308	68	116	25	32	7
Swimming	196	43	118	26	142	31
Scuba Diving	447	98	5	1	4	1
Water Skiing	405	89	39	8	12	3
Picnicking at Lake or River	224	49	194	43	38	8
Fishing	258	57	120	26	78	17
Camping at Lake or River	449	98	5	1	2	--
Outdoor Ice Skating	452	99	3	1	1	--

TABLE 3 -- Day and Time When People Usually Participated in Water Recreation Activities (n=456)

	Respondent		Others in Household	
	No.	%	No.	%
Monday through Friday, daytime	69	15	107	24
Monday through Friday, evening	58	13	92	20
Saturday or Sunday	145	32	220	48
Vacations or holidays	100	22	122	27

TABLE 4 -- Season of Year When People Participated in Water Recreation Activities (n=456)

	Respondent		Others in Household	
	No.	%	No.	%
Spring	67	15	101	22
Summer	192	42	286	63
Autumn	46	10	74	16
Winter	21	5	33	7

TABLE 5 -- Water Recreation Facilities Used by Respondents or Members of Household in 1973 (n=456)

	No.	%
Lake Erie	120	26
Private pool	184	40
Public pool	90	20
Lake or reservoir (not Erie)	164	36
River or stream	96	21
Pond	5	1
Quarry	4	1

TABLE 6 -- Water Recreation Equipment Owned by Respondent or Members of Household (n=456)

	No.	%
Sailboat	4	1
Power boat	56	12
Canoe or row boat	35	8
Swimming pool	44	10
Diving equipment	14	3
Ice skates	128	28
Water skis	35	8
Fishing gear	241	53

TABLE 7 -- Estimated 1973 Expenditures for Water Recreation by Respondent's Household (n=456)

	No.	%
Less than $20	252	55
20 - 49	70	16
50 - 99	67	15
100 -499	52	11
500 or more	15	3

TABLE 8 -- How Water Recreation Facilities in Northern Ohio Compare to Others Elsewhere (n=456)

Northern Ohio facilities are:	No.	%
much better	20	4
better	27	6
about same	136	30
poorer	101	22
much poorer	38	8
don't know	134	30

TABLE 9 -- Water Recreation Activities Which Respondent Likes but Says He or She Can't Do in Northern Ohio Because of Poor Water Quality or Poor Facilities (n=456)

	*No.	%
None named	345	76
Boating	15	3
Swimming	84	18
Fishing	28	6
Picnicking	3	1
Skiing	16	4
Skating	3	1

*Column totals more than 456 because multiple answers were allowed.

TABLE 10 -- What Should be Done to Improve Water Recreation Facilities in Northern Ohio (n=456)

	*No.	%
No suggestion	273	60
Stop polluting water	127	28
Clean beaches and riverbanks	25	5
Remove stumps, rocks from water	5	1
Build dams, flood prevention	5	1
More and bigger recreation areas	46	10
Enforce better safety rules	11	2
Stock more fish	5	1

*Column totals more than 456 because multiple answers were allowed.

Not surprisingly, the least likely time for water recreation was daytime on Monday through Friday.

Table 4 shows that summer was by far the most popular season of the year for water recreation activities in the Lake Erie Tributary Basin of Northern Ohio. About two-thirds of the households had one or more members who participated in at least one such activity during the summer of 1973. Winter was the least likely season for water recreation.

Lake Erie is by itself a most important place of water recreation for people who live in Northern Ohio, with about one-fourth (26%) of the households making such use of it, as shown in Table 5. All other lakes and reservoirs combined were used at least once for water recreation by about one-third (36%) of the households. Naturally, there was considerable overlap of use of both Lake Erie and other lakes and reservoirs by some people. Private pools were the other most-used water facility, with 40% of the households making some use of them.

Fishing gear, as shown in Table 6, was owned by slightly more than half (53%) of the households. Ice skates were owned in 28% of the sample households, with no other type of water recreation equipment being owned by as many as 15%. (Respondents were not asked about the ownership of swim suits.)

About 55% of the respondents estimated that their entire households spent less than $20 on water recreation in 1973. (A few of these people indicated that their households made no such expenditure at all.) On the other hand, as shown in Table 7, about 14% of the respondents said their households spent $100 or more on water recreation. The estimated expenditures included both equipment and admission fees.

Respondents were asked to make a general comparison of water recreation facilities in Northern Ohio with those they knew about elsewhere. As shown in Table 8, 30% said they did not know enough about such facilities in other places to make a comparison, another 30% said facilities were about the same in Northern Ohio as elsewhere, and another 30% said facilities in Northern Ohio were "poorer" or "much poorer." Only 10% said Northern Ohio's facilities were "better" or "much better" than those they knew about outside the region.

These responses, of course, do not necessarily reflect the quality of Northern Ohio's water recreation facilities compared with such facilities in other places. They do, however, reflect the respondents' perception of the comparative quality of such facilities. The fact that 30% of the respondents thought the region's facilities were poorer than others, while only 10% thought they were better may simply reflect highly selective knowledge of facilities in other places. That is, when people travel far from home to use water recreation facilities, it seems likely that they are making vacation or convention trips to facilities that are well above the average even for the other region of the country.

Respondents were asked if there were any water recreation activities in which they would like to participate in Northern Ohio but could not because of poor water quality or inadequate facilities. Table 9 shows that about three-fourths (76%) of the sample named no such activity. Only swimming was named at all frequently (18%), and the reason usually given for that answer was that public waters were polluted.

When asked what, if anything, should be done to improve water recreation facilities in Northern Ohio, 60% of the sample (see Table 10) made no suggestion. When suggestions were made, they were more likely to be concerned with prevention than with cure. That is, 28% of the sample said people (including governments and industries) should stop polluting bodies of water, while only 6% gave such answers as "clean the beaches and riverbanks" or "remove stumps and rocks from lakes and rivers." The only other suggestion given by many respondents (10%) was that more and bigger recreation areas such as beaches, marinas, and picnic grounds should be provided.

Water Recreation vs. Demographics

In general, man and women were not found to be different in their water recreation behavior. They participated in the same kinds of activities in about the same proportions.

However, 17% of the men participated on weekday evenings, compared to 9% of the women. ($X^2=5.70$, df=1, n=432, $p < .02$) And men (19%) were also more likely than women (11%) to participate in the spring. ($X^2=4.63$, df=1, n=432, $p < .04$)

Among the quarter of the respondents who said they did not participate in certain water recreation activities in Northern Ohio because of poor water quality or inadequate facilities, women were more likely (78%) than men (64%) to cite swimming. They were also more likely (7% to 2%) to say "skiing." Men, however, were more likely (26%) than women (6%) to cite fishing. (X^2=9.05, df=3, n=102, $p<.03$)

Not surprisingly, age was observed to be a rather important correlate of water recreation activities. Households in which the respondent (usually the head of the household or the spouse) was between 18 and 24 years of age were more likely than other households to include somebody who went boating, swimming, or picnicking by a lake or stream in 1973. For example, 49% of the households with respondents in this age bracket included somebody who went boating, compared to only 9% of the households with respondents who were 65 or older. The same pattern prevailed for the other two activities named. (Boating: X^2=36.01, df=10, n=436, $p<.0001$. Swimming: X^2=117.67, df=20, n=436, $p<.001$. Picnicking: X^2=38.79, df=15, n=436, $p<.001$.) Interestingly, fishing was not related to age.

Young people appeared to be more likely than older people to participate in water recreation activities at any time of day or day of week. For example, 29% of the respondents who were age 18 to 24 participated in the daytime on weekdays, compared to 17% of those in the 25 to 34 and 35 to 44 age brackets, 14% of those who were 45 to 54, 12% of those who were 55 to 64, and 2% of those who were 65 or older. (X^2=12.43, df=5, n=436, $p<.03$) The same relationship to age was observed for water recreation on weekday evenings, on weekends and during vacations and holidays.

Not surprisingly, age of respondents was also negatively correlated with participation in water recreation in the spring and summer. That is, the youngest respondents were the most likely to participate, while the oldest were the least likely. No such relationship was observed for autumn and winter, reflecting the fact that only a tiny minority of adults of any age participated in water recreation in Northern Ohio in those seasons of the year.

Age was also negatively related to the use of lakes and reservoirs for recreation. (X^2=38.86, df=5, n=436, $p < .0001$) In fact, the drop-off as age increased was precipitous. About 69% of those in the 18-24 bracket used lakes and reservoirs, compared to 40% of those aged 35 to 44, and 9% of those who were 65 or older.

Age was also negatively related to swimming in private pools, although there was not a steady decline throughout the age scale. Approximately half of the people in the 18-24, 25-34, 35-44, and 45-54 brackets made use of private pools. However, such was true of only 23% of the 55 to 64 year olds and 11% of those who were 65 or older. (X^2=33.07, df=5, n=436, $p < .0001$) A very similar pattern was observed in regard to use of public pools.

Households headed by middle-aged people (35 to 54) were more likely than households headed by younger or older people to own ice skates (X^2=33.25, df=5, n=436, $p < .0001$) and to have spent more than $100 on water recreation in 1973. (X^2=31.49, df=20, n=418, $p < .05$)

Education was observed to be a correlate of water recreation activities in several ways.

Households in which the respondent (usually the head of the household or spouse) had at least a high school diploma were more likely to include boaters than were households where respondents were not high school graduates. For example, boaters were found in only 17% of the households in which the respondent attended high school but did not graduate, compared to 34% of the households in which the respondent had a high school diploma but never went to college, and 47% of the households where the respondent was a college graduate. (X^2=18.50, df=10, n=421, $p < .05$)

(It should be kept in mind that observing a correlation between two variables does not necessarily demonstrate that variation in one causes the variation in the other. That is, even though people with more education were in households with more boaters, the data do not demonstrate that increasing one's formal education is likely to increase his or her participation in boating. The association may have other causes. For example, it could be that people with more education came from homes that were more active in

many aspects of life, including boating. At any rate, the reader of this report should be cautious in drawing direct causal inferences from the many relationships that are reported.)

Households in which respondents had a high school diploma or more education were also more likely to include people who participated in water recreation on weekends than were households in which respondents had less education. (X^2-11.70, df=5, n=421, $p < .04$)

Similarly, households where the respondents had at least a high school diploma were more likely than others to include people who participated in water recreation in the summer, ranging from 36% in the lowest education group to approximately two-thirds of those in each group having high school diplomas or more education. (X^2=19.67, df=5, n-421, $p < .002$) The same pattern was observed for autumn (X^2=13.98, df=5, n=421, $p < .02$), but at that season no more than 20% of any educational level participated in water recreation in Northern Ohio.

Education of the respondent was also positively correlated with some aspects of his or her own water recreation behavior.

The proportion of respondents participating in water recreation during vacations and holidays ranged from 12% of those with eighth grade education or less to 31% of those with college degrees. (X^2=10.64, df=5, n=421, p=.05)

Furthermore, the more education a respondent had, the more likely he or she was to participate in water recreation in the summer, the proportion ranging from 20% of those with no high school education to 67% of the college graduates. (X^2=24.61, df=5, n=421, $p < .001$)

Water recreation was also found to be related in several ways to total household income in 1973.

As might be expected, household income was found to be positively correlated with the amount of money spent on water recreation by the household. Some 74% of the "under $5,000" households spent less than $20, while that was true of only 39% of the households having $25,000 or more income. Furthermore, only 6% of the households with less

than $10,000 income spent $100 or more on water recreation during the year, compared to 36% of the households with at least $25,000 income.

There was a positive correlation between household income and each of three types of water recreation: boating, swimming, and use of a private swimming pool.

Only 14% of the households with less than $5,000 income included anyone who boated in 1973, compared to 44% of the households with $20,000 or more. Furthermore, the "$25,000 or more" households were the most likely (19%) to have boated at least eight times. ($X^2=24.65$, df=10, n=358, $p < .01$)

The same pattern held for swimming. Only 23% of the lowest income households included swimmers, compared to about two-thirds of each income level above $14,999. In addition, the households with $25,000 or more income were the most likely (28%) to include people who went swimming 22 or more times in 1973. ($X^2=50.72$, df=20, n=358, $p < .001$)

As household income increased, the probability that a member used a private swimming pool increased, ranging from 11% for the "under $5,000" households to 63% for the "$25,000 or more" households. ($X^2=29.17$, df=5, n=358, $p < .0001$)

As would be expected, during the summer when water recreation is most popular in Northern Ohio, people in low income households were the least likely to participate. Only 31% of the lowest income category households included anyone who did so, compared to 56% of the households with $5,000 to $9,999 income, and about 75% of the households in each of the higher brackets. ($X^2=31.54$, df=5, n=358, $p < .0001$)

For the most part, the data showed no differences between white and non-white people as to water recreation patterns. However, there were three differences.

Non-white respondents were more likely (24%) than whites (13%) to engage in water recreation during the daytime Monday through Friday. ($X^2=3.88$, df=1, n=406, $p = .05$) Non-whites were also more likely (33%) to have gone swimming in public pools in 1973 than were whites (18%). ($X^2=5.46$, df=1, n=406, $p < .02$)

Members of white households were more likely (31%) to have participated in water recreation during vacations and holidays than were members of non-white households (16%). (X^2=4.93, df=1, n=406, p = .03)

Non-Recreational Uses of Water

As shown in Table 11, the majority (58%) of the households in the survey got their water from public water systems. Most of the others had private wells, with a very few getting water from other sources such as lakes, rivers or ponds.

Table 12 reveals that in general, the respondents were pleased with the quality of the water they used in their households. They rated the water on seven characteristics: odor, taste, color, temperature, amount, hardness, and pressure. On each of these characteristics except hardness, 60% to 79% of the respondents said the water was "good" or "very good." Only 37% of the respondents gave such a rating for the water's hardness, but an additional 39% said the water was "fair" in this respect. Consequently, even on the characteristic of hardness, only one-fourth of the respondents said the water was "poor" or "very poor." Almost all of those who rated the hardness of the water negatively considered the water to be too hard.

Table 14 shows that only 17% of the households watered their lawns more than twice a week in the summer. Only 12% (as seen in Table 15) used water for livestock, 6% used it for machinery and buildings, and a mere 3% of the sample households in the Lake Erie Tributary Basin of Northern Ohio used water for irrigation. In other words, most households did not use much water outside the house.

Table 13 shows the estimates of the number of gallons of water used "yesterday" by households for "indoor" uses such as cooking, cleaning, bathing, drinking. About 53% of the respondents estimated that their households used between 25 and 99 gallons for such purposes "yesterday." Questionnaires were delivered and picked up, for the most part, on Monday through Saturday, so these estimates are essentially for weekdays. The question was not intended to be a measure of water consumption so much as it was intended to assess respondents' perceptions of amount of water used.

TABLE 11 -- Primary Source of Water for Households in Sample (n=456)

	No.	%
Public water system	264	58
Private well	183	40
Lake, pond or river	2	--
Other source or not answered	7	2

TABLE 12 -- Ratings of Quality of Household Water on Seven Characteristics -- Read Across

	Very Poor %	Poor %	Fair %	Good %	Very Good %
Odor (n=409)	12	7	19	30	33
Taste (n=414)	10	8	22	29	31
Color (n=402)	6	6	16	31	41
Temperature (n=391)	3	3	17	33	44
Amount (n=397)	5	5	11	30	49
Hardness (n=398)	16	9	39	23	14
Pressure (n=407)	7	7	18	32	36

TABLE 13 -- Estimates of Number of Gallons of Water Used "Yesterday" by Households in Sample (n=456) for Cooking, Drinking, Cleaning and Bathing

Gallons Used	Households No.	%
0-24	50	11
25-49	110	24
50-74	77	17
75-99	56	12
100-124	51	11
125-149	25	6
150 or more	54	12
Don't know or not answered	33	7

TABLE 14 -- How Often Lawn or Garden Is Watered During Summer (n=456)

	Households	
	No.	%
Twice a day	4	1
Once a day	32	7
Every other day	42	9
Twice a week	119	26
Less than twice a week	105	23
Never or not answered	154	34

TABLE 15 -- Uses of Water Outside the House for Purposes Other than Watering Lawn or Garden (n=456)

	Households	
	No.	%
Livestock	53	12
Irrigation	15	3
Machinery/Buildings	28	6

TABLE 16 -- If Respondent Had Question About Household Water Quality, Whom Would He or She Contact? (n=456)

	No.	%
City agency	98	22
County agency	45	10
State agency	7	2
Federal agency	45	10
Utility company	27	6
Other company or business	24	5
Mayor, Congressman or other person	14	3
Unspecified water department	61	13
Nobody or not answered	135	30

TABLE 17 -- What Improvements Would Respondent Like for Household Water (n=456)

	No.	%
Improve taste	56	12
Improve color	17	4
Improve odor	33	7
Remove chemicals	31	7
Increase supply	14	3
Change pressure	41	9
Add facilities at point of consumption	44	10

Respondents were asked whom they would turn to if they had questions about household water quality. Table 16 shows that about one-fourth of them named a city agency, one-tenth named a county agency, and another tenth named a federal agency. Another 13% said they would take the question to the "water department," without specifying whether it was city or county or whatever.

When asked what improvements they would like to have made in their household water, a majority of the respondents made no suggestion at all. The only suggestions (Table 17) that were made with any substantial frequency were: improve the taste, 12%; add facilities at point of consumption (such as water softener, new pump or new well), 10%; change pressure (either up or down),9%; remove chemicals, 7%; and improve odor, 7%. Obviously, answers to this question were consistent with the ratings of water quality that were reported in Table 12.

Non-Recreational Uses of Water vs. Demographics

There were no significant differences between the sexes as to non-recreational uses of water. Furthermore, no meaningful relationships were found between the educational level of the respondent and such water use.

Household income was observed to be correlated with respondents' estimates of the amount of water used by the household. In general, upper income households were estimated by respondents to use large amounts of water as compared to low income households. From 38% to 44% of the households in each income bracket above $14,999 in 1973 estimated they used 100 gallons or more "yesterday." The same level of water consumption was estimated by only 18% of the households with less than $5,000 income, 20% of those with between $5,000 and $9,999, and 33% of those with incomes between $10,000 and $14,999. ($X^2=44.42$, df=30, n=343, $p<.05$)

Age was found to be related to ratings of the quality of household water in one respect. Respondents who were 45 to 54 years of age were the least likely to be satisfied with the hardness of the water. Only 22% of them said the water was "good" or "very good" in this respect. Interestingly, the youngest (18 to 24) and oldest (65 or older) respondents were the most likely to give such ratings: 54% of each group. For all other age groups, about 38% of the respondents said the hardness of their household water was "good" or "very good." ($X^2=31.39$, df=20, n=385, p=.05)

Length of residence in Northern Ohio was observed to be related to source of household water. Some 49% of the respondents (mostly household heads) who had lived in Northern Ohio for five years or longer said their households got their water from private wells, compared to 32% of those who had lived in the region less than five years. (X^2=11.65 df=1, n=423, $p < .001$) The finding reflects the fact that newcomers to the area mostly live in urban communities, while long-term residents include a higher proportion of farmers and people with homes in the country.

Respondents who had lived in Northern Ohio the shortest time were the most likely to say the taste of their household water should be improved. Among those who had lived in the region less than two years, 29% gave such a response. For each category of respondents who had lived in the region more than two years, only 10% to 17% said the taste of the water needed improving. (X^2=12.16, df=5, n=432, $p < .04$) Apparently, most people become conditioned to the taste of the water in a given place if they stay there very long.

Analysis of the data revealed that non-white households were somewhat less satisfied with their household water supplies than were white households. About 14% of the non-whites said the water temperature was "poor" or "very poor," compared to only 5% of the whites. (X^2=10.27, df=4, n=359, $p < .04$) Furthermore, 28% of the non-whites said water pressure was "poor" or "very poor," compared to 12% of the whites (X^2=12.74, df=4, n=373, $p < .02$), and 16% of the non-whites said chemicals should be removed from the water as against 6% of the whites. (X^2=5.18, df=1, n=405, $p < .03$) It should be noted, however, that the unfavorable responses were given by a minority of each group.

Respondents' Attitudes Toward Water Resources and Agencies Which Provide Water Services

As shown in Table 18, two-thirds of the respondents did not name any agency as being most responsible for the quality of water in general in Northern Ohio. About 10% said cities were mostly responsible, and 6% cited the department of health.

Similarly, as shown in Table 19, about two-thirds of the respondents did not name any agency as being most responsible for maintaining the quality of the water that

TABLE 18 -- Government Agency Which Respondent Says Is Most Responsible for Maintaining Water Quality in General in Northern Ohio (n=456)

	No.	%
Cities	47	10
Department of Health	29	6
Water Department	17	4
Department of Interior	11	2
Department of Conservation	6	1
Department of Agriculture	2	--
Other agency	40	9
Nobody, don't know or not answered	304	67

TABLE 19 -- Government Agency or Other Service Which Respondent Says Is Most Responsible for Maintaining Quality of Water Used in Household (n=456)

	No.	%
Cities	69	15
Department of Health	28	6
Water Department	26	6
Department of Conservation	3	1
Department of Agriculture	1	--
Department of Interior	1	--
Other agency or service	16	4
Nobody, don't know, not answered	312	69

TABLE 20 -- Is Water Pollution a Problem in Northern Ohio? (n=456)

	No.	%
Yes, very definitely	255	56
Yes, to some extent	121	27
No, not much	24	5
No, definitely not	4	1
Don't know or not answered	52	11

TABLE 21 -- Kinds of Water Pollution Respondents Said Were Serious in Northern Ohio (n=456)

	* No.	%
None named	190	42
Muddy water, erosion	14	3
Raw sewage from cities	92	20
Dumping garbage, trash	37	8
Chemicals in water	42	9
Algae, color, odor	11	2
Industrial waste	165	36
Other	20	4

*Multiple answers allowed.

TABLE 22 -- Kinds of Water Pollution Seen by Respondent in His or Her Community in Past Year (n=456)

	* No.	%
None named	280	61
Dumping garbage, trash	35	8
Algae, color, odor	31	7
Muddy water, erosion	6	1
Chemicals in water	29	6
Raw sewage from cities	57	13
Industrial waste	45	10
Other	29	6

*Multiple answers allowed.

TABLE 23 -- Have Groups Listed Below Done Their Fair Share in Stopping Water Pollution in Northern Ohio? (n=456)

	No.	%
Industries		
Yes	62	14
No	243	53
Don't know, not answered	151	33
Cities and Counties		
Yes	62	14
No	221	49
Don't know, not answered	173	38
Farmers, land owners		
Yes	129	28
No	96	21
Don't know, not answered	231	51

TABLE 24 -- How Strictly, in Respondent's Opinion, Are Pollution Laws Enforced in Northern Ohio Against Groups Listed Below? (n=456)

	No.	%
Industries		
Strongly enforced	11	2
Enforced	101	22
Loosely enforced	284	62
Unenforced	19	4
Not answered	41	9
Cities and counties		
Strongly enforced	8	2
Enforced	115	25
Loosely enforced	253	56
Unenforced	28	6
Not answered	52	11
Farmers, land owners		
Strongly enforced	17	4
Enforced	116	25
Loosely enforced	196	43
Unenforced	49	11
Not answered	78	17

TABLE 25 -- Would Respondent Support a 5% Increase in Property Tax to Eliminate Serious Water Pollution in His or Her Community? (n=456)

	No.	%
Definitely yes	30	7
Probably yes	147	32
Probably not	113	25
Definitely not	136	30
Not answered	30	7

TABLE 26 -- How Serious Respondent Thinks Water Pollution Is In Lake Erie (n=456)

	No.	%
Very serious	177	39
Serious	134	29
Moderately serious	86	19
Slightly serious	21	5
Not at all serious	2	--
Not answered	36	8

TABLE 27 -- Who Is to be Blamed for Polluting Lake Erie? (n=456)

	*No.	%
Nobody named	117	26
Everyone	56	12
People who use lake	27	6
Industry	263	58
Cities	55	12
Waste treatment plants	20	4
Other	36	8

* Multiple answers allowed.

TABLE 28 -- Who Should Clean Up Lake Erie? (n=456)

	*No.	%
Nobody named	105	23
Everyone	49	11
People who pollute lake	62	14
Waste treatment plants	2	--
Industry	109	24
Federal government	118	26
State or city government	152	33
Michigan or Canada	15	3
Other	20	4

* Multiple answers allowed

TABLE 29 -- Ratings of Importance of Six Issues -- Read Across

	Least Importance %	Less Importance %	Average Importance %	Great Importance %	Most Importance %
Crime prevention (n=421)	2	1	4	10	84
Transportation (n=389	15	15	33	21	15
Water pollution (n=401)	3	4	20	29	44
Health services (n=396)	4	8	21	29	37
Recreation (n=391)	21	16	31	17	15
Air pollution (n=411)	5	5	15	24	51

was used in the household. Some 15% said the cities were most responsible, and the department of health and water department were named by 6% each.

About 56% of the respondents (Table 20) said water pollution was "very definitely" a problem in Northern Ohio. An additional 27% said it was "to some extent." In other words, more than four out of five of these adults in the Lake Erie Tributary Basin of Northern Ohio thought water pollution was a problem in the area. Only 1% said water pollution was "definitely not" a problem.

Even though more than 80% of the respondents said water pollution was a problem in Northern Ohio, 42% did not name even one specific kind of water pollution as being serious in the region, as shown in Table 21. The kind of pollution that was most often listed (36%) as being a serious problem was the disposal of industrial waste into bodies of water. The next most often cited problem (20%) was the pumping of raw sewage into water by cities.

When asked what kinds of water pollution they had seen in their own communities in the past year, 61% of the respondents (Table 22) did not name even one thing. Raw sewage from the cities (13%) and industrial waste (10%) were listed most often, but the dumping of garbage or trash into water by individuals (8%) and discolored or odious water (7%) were not far behind.

As shown in Table 23, about half of the respondents said industries were not doing their fair share in stopping water pollution in Northern Ohio. Almost the same proportion said cities and counties were not doing their fair share. On the other hand, only 21% said farmers and other land owners were not doing their fair share. For each of these groups, however, a large proportion of respondents said "don't know' or did not answer the question. This was true for half the respondents in the case of farmers and other land owners and about one-third of the respondents for industries and cities and counties.

As shown in Table 24, almost two-thirds of the respondents thought pollution laws were "loosely enforced" or "unenforced" against industries in Northern Ohio. A slightly smaller proportion gave those responses in regard to cities and towns, but only about half the respondents said this in regard to farmers and other land owners. However, only about one-fourth of the respondents thought pollution laws were "enforced" or "strongly enforced" against each of the three groups.

Each respondent was asked what he or she would do if a 5% increase in property tax were proposed to eliminate a serious water pollution problem in his or her community. As shown in Table 25, about 39% said they "probably" or "definitely" would support the tax, while 55% said they "probably" or "definitely" would not support it.

Almost nine out of 10 respondents (Table 26) said water pollution in Lake Erie was anywhere from "moderately serious" to "very serious." About 58% of the respondents (Table 27) said industry was to be blamed for this pollution, 12% said cities were to be blamed, and another 12% said everyone was at fault. Who should have to clean up Lake Erie? About one-third of the respondents (Table 28) said it should be the state or city governments, while about one-fourth cited the federal government, and close to one-fourth said it should be industry.

In other words, although 58% said industry was to blame for polluting Lake Erie, only 24% said industry should clean it up. On the other hand, nobody said the federal government was to blame for polluting the lake, but 26% said it should do the cleaning.

Respondents were asked to rate, on a five-point scale, the importance of six different public issues. Crime prevention was seen to be the most important by far, with 84% (Table 29) saying it was of "most importance." Air pollution was rated to be of "most importance" by 51%, and the same rating was given to water pollution by 44%. Recreation and transportation trailed the other issues, each of them being cited as being of "most importance" by only 15%. Obviously, water pollution was rated third among the six issues but was far behind crime prevention in importance to the adult residents of the Lake Erie Tributary Basin of Northern Ohio.

Attitudes vs. Demographics

Men and women were found to differ quite often in their attitudes toward water resources and the agencies which provide water services.

Men (56%) were more likely than women (46%) to say cities and counties had not done their fair share to stop

water pollution. On the other hand, women (41%) were more likely than men (29%) to say they didn't know whether cities and counties had done their fair share. (X^2=6.10, df=2, n=413, $p < .05$)

Consistent with the above findings, women were more likely (35%) than men (28%) to say water pollution laws were "strictly enforced" or "enforced" against cities and counties in Northern Ohio. (X^2=14.61, df=3, n=388, $p < .01$)

Men were also more likely (30%) than women (14%) to say farmers and other land owners had not done their fair share to stop water pollution in the region, while women (56%) were more likely than men (40%) to say "don't know." (X^2=16.98, df=2, n=415, $p < .001$)

As to a 5% increase in property tax to fight water pollution at the local level, men were more likely (37%) than women to say they "definitely" would not support it. Women, on the other hand, were more likely (39%) than men (30%) to say they "probably" would support such a tax. (X^2=9.32, df=3, n=407, $p < .03$)

Women were more likely (19%) than men (7%) to say the responsibility for cleaning up Lake Erie belongs to "everyone." Men, on the other hand, were more likely (31%) than women (19%) to say the federal government should clean up the lake. (X^2=14.55, df=5, n=351, $p < .02$)

In rating the importance of six specified issues, women gave the "of most importance" response in regard to recreation less often (10%) than did men (20%). (X^2=7.54, df=2, n=378, $p < .03$)

Age was also found to be a frequent correlate of attitudes toward water resources and agencies that provide water services.

Age was negatively correlated with the belief that water pollution was a problem in Northern Ohio. From 84% to 90% of the respondents in each age bracket under 65 said water pollution was "definitely" or "to some extent" a problem, while only 70% of those who were 65 or older gave these responses. Interestingly, the 65 or older respondents were no more likely than others to say water pollution was not a problem. Instead, 27% of them said "don't know," while no more than 9% of any other age bracket gave that answer. (X^2=37.35, df=20, n=424, $p < .01$)

People between the ages of 25 and 54 were more likely than others to say that industries had not done their fair share to stop water pollution in Northern Ohio. From 60% to 65% of the respondents in each age bracket in that range said industries had not done so, compared to 53% of the 18-to-24 respondents, 41% of the 55-to-64 group, and 35% of those who were 65 or older. (X^2=18.17, df=10, n=418, $p < .05$)

Age was negatively correlated with the belief that pollution laws were enforced against farmers and other land owners in Northern Ohio. At least 50% of the respondents in each age bracket under 35 said the laws are "enforced" or "strictly enforced," while no more that 35% of those in higher age brackets did so. (X^2=24.56, df=15, n=366, $p < .06$)

Young adults in the sample were more likely than older ones to think that pollution of Lake Erie was a problem. For each bracket under age 35, the "very serious" and "serious" responses were given by 82%. From 70% to 77% of each bracket in the 35 to 54 range gave these responses, compared to 60% to 64% of each bracket in the 55-and-older range. (X^2=24.62, df=15, n=406, $p < .06$)

Between 82% and 89% of the respondents in every age bracket except one said crime prevention was "of most importance." The exception was the 25-to-34 group in which only 71% gave such a response. (X^2=24.47, df=10, n=400, $p < .01$)

Although a majority of all age groups thought water pollution was an important issue, the youngest and oldest adults were the least likely to think so. About 67% of the 18-to-24 group and 54% of those who were 65 or older said it was "of great" or "most" importance, compared to 73% to 80% of all brackets in the middle range. (X^2=21.24, df=10, n=390, $p < .02$)

As might be expected, respondents who were 65 years of age or older were least likely to think recreation was an important issue. Only 14% of them gave it a "great" or "most" rating, compared to 30% to 44% of all other age brackets. (X^2=22.44, df=10, n=379, $p < .02$)

Although a majority of every age group said air pollution was a problem in Northern Ohio, those 65 or older were the least likely (60%) to say it was of "great" or "most" importance. About 66% of the respondents in the 55-to-64 age bracket gave such responses, compared to 71% or more of all other age brackets. (X^2=23.48, df=10, n=399, $p < .01$)

Household income was not found to be correlated with respondents' attitudes toward water resources and the agencies that provided water services.

Education was observed to be related to attitudes about water matters in many respects; one rather consistent relationship was that people who had little formal education were less likely than others to have (or at least to articulate) attitudes.

When asked which agency was most responsible for water quality in Northern Ohio, people who never went to college were the most likely to say "don't know" or to give no answer. This was true of at least 50% of each educational level without college, but was true of only 45% of those respondents with "some college" and 27% of those with a baccalaureate degree or more education. (X^2=42.64, df=25, n=272, $p < .02$)

There was a positive linear correlation between education and the belief that water pollution was a problem in Northern Ohio. About 72% of the respondents who never went to high school said water pollution was a problem to at least some extent, compared to 94% of those who were college graduates. And, again, people with little education were least likely to state an opinion. About 80% of those who never went to high school expressed an opinion, 83% of those with "some high school" did so, and 94% or more of each group with at least a high school diploma gave an opinion. (X^2=32.77, df=20, n=412, $p < .04$)

When asked what kinds of water pollution were most serious in Northern Ohio, respondents with little education were the least likely to list anything. About 68% of those who did not go beyond the eighth grade failed to list anything, with the proportion dropping linearly all the way to 26% of the college graduates. (X^2=43.32, df=25, n=403, $p < .02$)

A similar pattern was observed when respondents were asked to specify the kinds of water pollution they had seen in their own communities in the past year. About 83% of those with no high school listed nothing, compared to only 50% of the college graduates. Among those who did list types of water pollution they had seen in their communities, people with at least high school diplomas most often cited raw sewage from the cities or industrial waste, while those people with less education more often cited erosion and muddy water. (X^2=62.67, df=30, n=417, $p < .001$)

Education was related to the belief that industry had not done its fair share in stopping water pollution in Northern Ohio. Only 35% of those without high school thought it had not, while 64% of the college graduates gave that answer. Again, 44% of the people at the lowest educational level said "don't know," while only 12% of the highest educational level did so. (X^2=31.28, df=10, n=404, $p < .001$)

A similar pattern was observed in the sample in regard to the belief that cities and counties have not done their fair share in stopping water pollution. About 40% of the respondents without high school diplomas thought they had not, compared to about 63% of those who went to college. And, once more, people with little education were most likely to respond "don't know." That answer was given by about 46% of those who did not go to high school as against about 23% of those who went to college. (X^2=17.70 df=10, n=406, p=.06)

College graduates were the most likely (57%) to say they would at least "probably" support a 5% increase in property tax to combat pollution locally. Only about 31% of the people who did not complete high school indicated such support. (X^2=38.98, df=15, n=401, $p < .001$)

Length of residence in Northern Ohio was not a correlate of attitudes on water matters.

On the other hand, race was found to be a frequent correlate of such attitudes.

When asked how good a job was being done by whatever agency the respondent said was responsible for the quality of water used in his or her household, non-white respondents

were more likely (29%) than were white respondents (11%) to say "poor" or "very poor." (X^2=11.38, df=5, n=269, $p < .05$)

A similar pattern was observed in the sample in regard to the agency which the respondent said was responsible for water quality in general in Northern Ohio. About 31% of the non-whites said "poor" or "very poor" as against 14% of the whites. (X^2=10.30, df=5, n=293, $p < .07$)

When asked to list kinds of water pollution the respondents had seen in their own communities in the past year, 56% of the non-whites listed at least one kind as against 39% of the whites. (X^2=6.24, df=1, n=402, $p < .02$)

A clear pattern emerged as to how whites and non-whites differed in their thoughts about anti-pollution practices and the enforcement of pollution control laws in Northern Ohio. Non-whites were the more likely to think industry, government, and property owners had not done enough to stop polluting water. They were also the more likely to think that pollution laws were largely unenforced in the region.

About 71% of the non-whites said industry had not done its fair share in stopping water pollution in Northern Ohio, compared to 54% of the whites. Whites were more likely (31%) to say "don't know" than were non-whites (16%). (X^2=6.65, df=2, n=390, $p < .04$) Furthermore, 15% of the non-whites said pollution laws were "unenforced" against industry, while only 3% of the whites thought this to be true. About 28% of the whites said the laws were "enforced" or "strictly enforced," compared to 21% of the non-whites. (X^2=13.67, df=3, n=381, $p < .01$)

Also, 71% of the non-whites said cities and counties did not do their fair share in stopping pollution, compared to 49% of the whites, who were more likely to say the cities and counties did their share or to say "don't know." (X^2=10.67, df=2, n=390, $p < .01$) In addition, only 17% of the non-whites thought laws were "enforced" or "strictly enforced" against cities and counties, compared to 33% of the whites. (X^2=11.99, df=3, n=374, $p < .01$)

Farmers and other land owners were said not to have done their share in stopping water pollution by 39% of the non-whites and 20% of the whites, who were more likely to say these people did their share or to say "don't know." (X^2=7.55, df=3, n=352, $p < .06$)

Non-whites were more likely (16%) than whites (5%) to say they "definitely" would support a 5% increase in property taxes to combat local water pollution. Whites were more likely to say "probably not" or "definitely not." (X^2=8.86, df=3, n=386, p .04)

Media Use

As shown in Table 30, friends and relatives were named most often (49%) by respondents as being their sources of information about recreational water facilities. Newspapers were a close second (45%), with television (27%) and radio (19%) following.

Newspapers were the clear leaders (54%) as sources of information about non-recreation water facilities. They were followed by television (37%), radio (25%), and friends and relatives (21%).

About one-fifth of the people said they received no information about water facilities.

Respondents were asked how much time they spent with mass media "yesterday," and as shown in Table 31 modal responses were much the same as have been observed in other studies of adults. Some 52% of the respondents said they watched television from one to three hours, 45% said they listened to radio for anywhere from 1 to 59 minutes, and 38% said they read a newspaper for 20 to 39 minutes.

One-fifth of the respondents said they did not listen to radio at all, compared to approximately one-tenth who said they did not watch television or read a newspaper.

Patterns as to when these adults watched television or listened to radio (Table 32) were also much like those found in other studies. Radio listening was heaviest (36%) before 9 a.m. but remained popular (20% to 25%) until 7 p.m. Television viewing by these adults was very light in the morning (7% to 8% up until noon), increased somewhat (16% to 17%) in the afternoon, and became epidemic (69%) during the prime time of 7 p.m. to 11 p.m.

About one-tenth of the respondents (Table 33) recalled seeing an advertisement or news story or some other message about water on television or in a newspaper during "the past week." Only 4% remembered hearing any such message on

TABLE 30 -- Where Respondents Said They Got Most of Their Information About Water Resources in Northern Ohio (n=456)

	Recreation		Non-Recreation	
	*No.	%	*No.	%
Newspapers	207	45	246	54
Radio	88	19	113	25
Television	121	27	170	37
Friends or relatives	221	49	94	21
Government agency	47	10	46	10
Water recreation organization	16	4	3	1
Travel club or service	44	10	16	4
Commercial resort	26	6	4	1
General knowledge	3	1	4	1
Other	4	1	4	1
Received no information	83	18	106	23

*Multiple answers allowed.

TABLE 31 -- Amount of Time Respondents Spent With Mass Media "Yesterday"

	No	%
Newspapers (n=437)		
None	40	9
Less than 20 minutes	87	20
20 to 39 minutes	165	38
40 to 59 minutes	72	17
One hour or more	73	17
Radio (n=442)		
None	89	20
Less than one hour	198	45
1 to 3 hours	109	25
More than 3 hours	47	11
Television (n=444)		
None	46	10
Less than one hour	94	21
1 to 3 hours	231	52
More than 3 hours	73	16

TABLE 32 -- Time of Day Respondents Watched Television and Listened to Radio Yesterday (n=456)

	Television		Radio	
	No.	%	No.	%
Before 9 a.m.	31	7	164	36
9 a.m. - noon	36	8	95	21
noon - 4:30 p.m.	73	16	120	26
4:30 - 7 p.m.	76	17	89	20
7 - 11 p.m.	313	69	40	9
After 11 p.m.	39	9	22	5

TABLE 33 -- How Many Water Items (articles, documentaries, advertisements, etc.) Respondents Recalled Hearing or Seeing in Mass Media in Past Week (n=456)

	Newspapers		Television		Radio	
	No.	%	No.	%	No.	%
None	399	88	406	89	439	96
One	44	10	37	8	13	3
Two	10	2	10	2	3	1
Three	3	1	2	--	1	--
Four			1	--		

TABLE 34 -- How Many Newspapers Did Respondents Subscribe to or Usually Read (n=456)

	Dailies		Weeklies	
	No.	%	No.	%
None	65	14	389	85
One	285	62	53	12
Two	95	21	13	3
Three	11	2	1	--
Four	1	--		

TABLE 35 -- How Interested Respondents Were in Different Parts of Newspaper -- Read Across (n=456)

	Little or no interest %	Somewhat Interested %	Interested %	Very Interested %
Local	12	13	29	46
State, national	14	18	34	34
International	27	28	25	20
Sports	53	16	14	17
Comics	64	20	9	8
Classified ads	57	25	12	7
Editorial page	32	31	19	18
Society, women's	54	21	14	11
Business	47	26	18	10
TV or movies	49	27	16	9

TABLE 36 -- Respondents' Attention to Other Media (n=456)

	No.	%
Stuffers with water bill		
Received, usually read	146	32
Received, usually did not read	62	14
Never received	210	46
Not answered	38	8
Billboards with water messages		
Have noticed	51	11
Have not noticed	373	82
Not answered	32	7

radio during the same time. (The respondents were asked an open question on this matter, and they had to write in a brief description of each water message they could recall.)

Table 34 shows that 86% of these adults said they subscribed to or usually read (half or more of the issues) one or more daily newspapers. Also, 15% said they subscribed to or usually read one or more weekly newspapers.

Table 35 reveals that respondents showed greatest interest in local news, with state and national news also being very popular. Special sections such as sports, society, editorials, etc., also had sizable audiences, but as would be expected those audiences were more restricted than was the audience for general local and state and national news.

About half of the respondents, as shown in Table 36, said they remembered receiving "stuffers" with water bills, and about two-thirds of these people (32% of the total) said they usually read the information. About one-tenth of the adults remembered having seen water messages on billboards in their communities.

Media Use vs. Demographics

Women (54%) were more likely than men (44%) to get information on water recreation from friends and relatives. (X^2=4.51, df=1, n=432, $p = .04$) Men, however, were more likely (14%) than women to get information on water recreation from a travel service or automobile club. (X^2=8.16, df=1, n=432, $p < .01$)

Men were more likely (95%) to say they read a newspaper yesterday than were women (87%). Furthermore, men were more likely (20%) than women (13%) to say they read a newspaper for one hour or more. (X^2=11.91, df=4, n=420, $p < .02$)

On the other hand, women were more likely (85%) than men (77%) to say they were "interested" or "very interested" in local news. (X^2=12.44, df=4, n=405, $p < .02$)

Not surprisingly, women were more likely (78%) than men (30%) to indicate at least some interest in society and women's pages. (X^2=92.81, df=4, n=369, $p < .0001$) And, as would be expected, men were more interested in sports pages--54% said "interested" or "very interested"--than were women (21%). Furthermore, 20% of the men said they were not at all interested, compared to 42% of the females. (X^2=46.09, df=4, n=371, $p < .0001$)

Men were also more likely (41%) than women (25%) to say they were "interested" or "very interested" in business pages. (X^2=14.11, df=4, n=367, $p < .01$)

Women were more likely (69%) than men (54%) to be interested in TV and movie pages. (X^2= 13.27, df=4, n=432, $p < .01$)

Television viewing patterns of the sexes were much alike except that women were more likely (22%) than men (11%) to have watched between noon and 4:30 p.m.(X^2=8.27, df=1, n=432, $p < .01$)

Age was found to be, as in other studies, a rather consistent correlate of media use.

People who were 55 years of age or older were the most likely (30%) to say they got most of their information about water recreation facilities in Northern Ohio from radio. No more than 19% of any other age bracket said this. (X^2=13.98, df=5, n=436, $p < .02$)

There was a strong negative linear correlation between age and the obtaining of water recreation information from friends and relatives. Among respondents in the 18-to-24 age bracket, 71% said they got such information that way. The proportion dropped steadily as age increased, and only 17% of the people who were 65 and older gave that response. (X^2=41.46, df=5, n=436, $p < .0001$)

About 40% of the respondents who were 65 or older said they did not listen to the radio at all "yesterday," compared to no more than 22% of any other age bracket. And only 2% of the oldest group said they listened for more than three hours, compared to 6% or more of all other brackets. (X^2=32.95, df=15, n=427, $p = .01$)

About 31% of the respondents who were 18 to 24 years old said they listened to the radio between 7 p.m. and 11 p.m. in contrast with no more than 11% of any other age group. (X^2=27.49, df=5, n=436, $p < .0001$)

As in other studies, for much of the newspaper data there was a positive correlation between age and affinity for the paper.

Some 84% of those respondents who were under 35 years of age said they read a newspaper "yesterday," compared to 93% of each of the older groups. Furthermore, 49% of those who were 65 or older said they read a newspaper for one hour or more, compared to about 20% of those who were between the ages of 45 and 64, and no more than 9% of those who were 44 or younger. (X^2=84.54, df=20, n=423, $p < .0001$)

Although all age groups liked local news in the newspaper, middle-aged and older adults were most enthusiastic. At least 86% of every age bracket over 44 gave local news a rating of "interesting" or "very interesting," while 68% to 77% of each younger group did so. (X^2=56.86, df=20, n=410, $p < .0001$) The same pattern was observed for international news, and a similar--but not as definitive--pattern was seen for state and national news in the newspaper.

Among respondents who were 45 or older, 57% to 71% of each group said they were "interested" or "very interested" in international news. That was true of only 35% to 48% of each younger group. (X^2=49.35, df=20, n=386, $p < .001$) For state and national news, such responses were given by 76% to 84% of each group over 44, compared to 65% to 71% of the younger groups. (X^2=28.58, df=20, n=404, $p < .10$)

Similar patterns were observed for interest in editorial and business pages. Concerning editorial pages, 28% to 36% of each age group under 45 said "interested" or "very interested," compared to 46% to 73% of each older group. (X^2=50.57, df=20, n=389, $p < .001$) For business pages, 12% to 28% of each age bracket under 45 said "interested" or "very interested," against 38% to 62% of each older group. (X^2=40.54, df=20, n=371, $p < .01$)

Not surprisingly, elderly people (65 or older) tended to be the heaviest daytime watchers of television, but were no more or less likely than others to watch in the prime time evening hours. About 17% of the elderly said they watched before 9 a.m., compared to 2% to 10% of each younger group. (X^2=12.12, df=5, n=436, p .04) Between noon and 4:30 p.m., 30% of the elderly viewed TV, compared to 10% to 21% of each younger group. (X^2=12.57, df=5, n=436, $p < .03$)

Household income was found to be related to gross measures of television and newspaper use.

The amount of time spent viewing TV "yesterday" by respondents was negatively correlated with household income. From 29% to 34% of the people in income brackets under $10,000 viewed TV for three hours or more, compared to 6% to 17% of each higher bracket. In addition, 13% to 20% of the people in each bracket above $19,999 watched no TV "yesterday," compared to 6% to 11% of the people in each lower income bracket. (X^2=31.12, df=15, n=355, $p < .01$)

There was a positive correlation between household income and number of daily newspapers subscribed to or "usually read." For each bracket earning $15,000 or more, 29% to 34% of the respondents had two or more newspapers. This was true of only 6% to 23% of the respondents in lower income brackets. One-fifth of the people in households with less than $5,000 said they had no daily paper, while nobody in the $25,000 or more group so replied. (X^2=22.59, df=10, n=358, $p < .02$)

Education was observed to be correlated with media use in some respects.

The amount of education the respondent had was positively related to the probability that he or she got most information about water recreation from friends or relatives. The proportion that did so ranged from 28% of those with no high school experience to half or more of those in every group having a high school diploma or more education. (X^2=11.29, df=5, n=421, $p < .05$)

For each group without a high school diploma, 32% to 44% said they received no information about non-recreational water facilities in Northern Ohio, compared to no more than 24% of each group with a high school diploma or more education. (X^2=12.78, df=5, n=421, $p < .03$)

The more education a respondent had, the more likely he was to subscribe to or read two or more daily papers. This was true of only 8% of those with no high school and increased with each higher level of education to 51% of those with college degrees. Furthermore, 28% of those without high school had no daily paper, while that was true of nobody with a college degree. (X^2=34.85, df=10, n=421, p=.0001)

People with college degrees were the most likely (68%) to be "interested" or "very interested" in international news, while no more than 56% of lower education levels gave

such responses. Also, 22% of those who never went to high school said they had no interest in such news, while no more than 11% of higher levels of education so replied. (X^2=44.14, df=20, n=377, $p < .01$)

People with the least education were the most interested in TV and movie pages in the newspaper. At least 40% of each group that did not finish high school was "interested" or "very interested," while no more than 29% of any higher level of education gave those responses. (X^2=32.07, df=20, n=363, $p < .05$)

People who had lived in Northern Ohio two years or more did the most newspaper reading "yesterday" and were the most interested in local news.

Among those who had been in the region less than 24 months, only 45% read a newspaper for more than 20 minutes, compared to 72% of the others. (X^2=8.84, df=1, n=418, $p < .01$)

About 82% of those who had lived in Northern Ohio two years or longer were "interested" or "very interested" in local news, compared to 52% of the short-term residents. (X^2=10.67, df=1, n=406, $p < .01$)

For the most part, white and non-white respondents did not differ greatly as to media use. There were, however, a few exceptions.

Whites were more likely (27%) than non-whites (10%) to say they got most of their information about non-recreational water facilities in Northern Ohio from radio. (X^2=6.57, df=1, n=406, p=.01)

Although whites and non-whites were about equally likely to have watched television "yesterday," whites watched more. About 71% of the whites watched one hour or more, compared to 53% of the non-whites. (X^2=10.05, df=3, n=402, $p < .02$)

White respondents were more likely (82%) than others (71%) to be "interested" or "very interested" in local news in the newspaper. (X^2=9.18, df=4, n=384, $p < .06$) Non-whites were more likely (15%) than whites (4%) to say they were not at all interested in state or national news in the newspaper. (X^2=9.70, df=4, n=381, $p < .05$)

About 36% of the non-white respondents expressed little or no interest in editorial pages, compared to 20% of the whites (X^2=13.53, df=4, n=366, $p < .01$)

Relationships Among: Attitudes Toward Water Resources, Use of Water Resources, and Sources of Information About Water

In the following sections concerning additional findings of the field survey, a relationship between variables will usually be listed or discussed only if it was found by Chi-square test to be statistically significant at or beyond the .05 level. The rare exceptions to that rule will be noted in the text.

Correlates of Belief That Water Pollution Was a Problem in Northern Ohio

In general, analysis of the data showed a positive correlation between participation in water recreation and the belief that water pollution was a problem in Northern Ohio.

As reported early in this paper, weekends and vacations were the times of greatest participation in water recreation. Among those respondents who said they participated on weekends, 69% said water pollution definitely was a problem in the region. This response, on the other hand, was given by only 52% of those who did not participate on weekends. Furthermore, 65% of those who participated on holidays and vacations thought pollution to be a definite problem, against 56% of the non-participants (significant at the .06 level).

The big water recreation seasons in Northern Ohio are spring and summer. It was found that 72% of those who participated in the spring said water pollution was definitely a problem, compared to 55% of the non-participants. Similarly, 67% of those who participated in water recreation in summer said pollution was a definite problem, against 51% of the others.

Even the experiences of other members of the household may have had some effect upon respondents' beliefs concerning water pollution. Among respondents who had household members who used water recreation facilities in the spring,

69% said pollution was a definite problem, compared to 55% of those from non-participating households. Similarly, 63% of those whose households included summer participants gave that response, but only 48% of the others did so.

In all these comparisons, non-participants and respondents from non-participating households were more likely than others to have said they did not know whether water pollution was a problem in the area.

The following chart shows additional correlates of the point of view that water pollution was definitely a problem in Northern Ohio. The chart gives for each group the percentage of respondents who held that belief.

Respondents:	% Who Said Pollution was Definite Problem
Used Lake Erie for recreation	69
did not	53
Owned fishing equipment	63
did not	51
Spent $20 or more on water recreation	67
did not	49
Got household water from public system	70
did not	41
Thought agency responsible for water quality did good job	54
did not	71
Thought industry had done enough to stop pollution	28
did not	77
Thought pollution laws were enforced against industry	30
did not	70
Thought cities, counties had done enough to stop pollution	36
did not	75
Thought pollution laws enforced against cities, counties	29
did not	72
Thought farmers, land owners had done enough anti-pollution	48
did not	62
Thought air pollution of most importance	69
did not	50

The chart clearly shows that adult residents of the Lake Erie Tributary Basin of Northern Ohio who thought water pollution was a definite problem in the region had these characteristics:

They used Lake Erie for recreation, owned fishing equipment, spent more than $20 a year on water recreation, got household water from a public water system, thought the agency responsible for water quality in general in the region did not do a good job, and thought that industry, cities, counties, farmers and land owners had not done enough to stop polluting waters in the Basin. They also thought that laws against water pollution were not enforced against industry, cities, counties, farmers and land owners in Northern Ohio. In addition to the belief that water pollution was a definite problem in the region, they also thought that air pollution was of "most" importance.

Correlates of Length and Place of Vacation in 1973

The probability of taking a vacation was positively correlated with the probability of boating, swimming, and ice skating in Northern Ohio.

Approximately 44% of the respondents who had taken 15 days or more of vacation in the past 12 months said at least one member of the household had gone boating in the region at least once during that time. The proportion giving that answer decreased as length of vacation decreased, with only 19% of those who took no vacation giving such a response.

About 62% of the respondents who took at least 15 days of vacation said some member of their families had gone swimming in Northern Ohio in the past 12 months, compared to 45% of those who took no vacation.

A similar pattern emerged for ice skating in the region, even though that form of recreation was not as popular as swimming or boating. About 23% of those who took more than two-weeks of vacation said some member of the household had gone ice skating, compared to 10% of those who took no vacation.

There was a curvilinear relationship between length of vacation and the use of private pools and lakes and reservoirs in the region.

Respondents who took 4 to 14 days of vacation were the most likely (46%) to be from households that engaged in water recreation on lakes or reservoirs in Northern Ohio in the 12 months before they were interviewed. Those who took no vacation were the least likely (22%), and those who took a month or more of vacation were next least likely (31%).

Respondents who took 15 days to one month of vacation were the most likely (53%) to be from households that made use of a private swimming pool, while those who took no vacation or no more than three days were least likely (27%). Those who took one month or more were next least likely (40%).

Ownership of power boats and fishing equipment was positively correlated with length of vacation. Some 24% of those who vacationed more than a month owned power boats, compared to only 5% of those who did not vacation. Two-thirds of those who vacationed more than a month owned fishing equipment, against only one-third of those who took no vacation.

Length of vacation was related to amount of money spent in 1973 on water recreation. People who took more than a month of vacation were most likely (12%) to be from households that spent $500.00 or more, while those who took no vacation were most likely (70%) to be from households that spent less than $20.

Length of vacation was also correlated with sources of information about water facilities in the Basin.

Respondents who took 15 days or more of vacation were more likely than others to get most of their information about water recreation from newspapers (56%) or from a travel service (17%). The comparable figures for those who took no vacation were 34% and 0%, respectively.

Respondents who took 8 days to one month of vacation were more likely (58%) than others to get most of their water recreation information from friends and relatives. These sources were listed by only 35% of those who took no vacation and 47% of those who took more than a month.

The place where the respondent vacationed was related to his or her water recreation activities and those of members of the household.

Only about 2 out of 10 of the respondents who took no vacation or vacationed within 25 miles of home were from households containing a person who had gone boating during the previous 12 months. About 4 out of 10 of those who had vacationed more than 25 miles from home were from such households.

About 35% of the respondents who took no vacation came from households that included a swimmer. The proportion of the other households that included at least one swimmer ranged from 54% of those who vacationed in Canada to 66% of those who vacationed in Ohio more than 25 miles from home.

Not surprisingly, people who vacationed in Ohio more than 25 miles from home were the most likely (50%) to come from households that engaged in water recreation on a lake or reservoir in Northern Ohio. People who took no vacation were the least likely (19%).

Ownership of certain types of water recreation equipment was related to place of vacation.

Respondents who vacationed in Ohio more than 25 miles from home were most likely (14%) to own a canoe or rowboat and were also most likely (65%) to own fishing equipment. On the other hand, those who vacationed at home or within 25 miles of it were the most likely (19%) to own a swimming pool.

Respondents who took no vacation were most likely (77%) to be in households that spent less than $20 on water recreation in a year, while those who vacationed in Canada were most likely (13%) to be from households that spent $500.00 or more. People who vacationed in Canada were also most likely (21%) to get most of their water recreation information from a travel service.

Correlates of Voter Registration

Respondents who were registered voters were more likely (50%) than others (31%) to get most of their information about water recreation from newspapers. They were also more likely (30%) than non-registrants (18%) to get such information from television.

Registered voters were more likely (59%) than non-registrants (40%) to say they got most of their non-recreation water information from newspapers. Also, 13% of them got such information from government agencies, compared to only 2% of the non-registrants.

People who were not registered to vote were more likely (33%) than others (22%) to say they received no information about non-recreational water.

About half of the non-registrants said they did not know what agency was most responsible for water quality in general in Northern Ohio, compared to 24% of the registrants. Among those who named an agency, both groups cited the city most often (17%). Registered voters cited the department of health more often (12%) than did others (4%).

Similarly, 42% of the non-registrants said they did not know what agency was most responsible for the quality of their household water, compared to 16% of the registrants. The latter group cited the city (35% to 27%), the health department (18% to 4%), and the water department (15% to 9%) more often than did non-registrants.

When asked what kinds of water pollution were the most serious, 51% of those respondents who were not registered to vote gave no response. Only 38% of the registrants gave no answer. Registrants were more likely than others to say "city sewage" (18% to 7%) or "industrial waste" (31% to 25%).

About 65% of the non-registrants gave no answer as to kinds of water pollution they had noticed in their communities in the previous 12 months, compared to 59% of the registrants. Some 11% of the non-registrants cited bad color or smell, compared to 4% of the registrants. On the other hand, 12% of the latter group cited city sewage as against 6% of the non-registrants.

Whether or not a respondent was a registered voter was related in several ways to media use. Approximately 90% of the registrants subscribed to or usually read a daily newspaper, compared to 80% of the others. Furthermore, 28% of the registrants had two more dailies, compared to 13% of the others. Similarly, 76% of the registrants read a newspaper for 20 minutes or longer "yesterday," as against 50% of the others.

Registered voters were more likely to say they were "interested" or "very interested" in local news (86% to 65%), state and national news (79% to 57%),international news (56% to 34%), and business news (36% to 23%)in the newspaper.

Correlates of Sources of Information About Water Recreation

As reported in Table 30, 49% of the respondents listed "friends and relatives" as being one of the sources from which they got most of their information about recreational water resources and facilities in Northern Ohio. Newspapers were listed by 45%, followed distantly by television (27%) and radio (19%). No other source was listed by more than 10% of the respondents.

Of the many variables examined in this survey, "friends and relatives" as a primary source of water recreation information proved to be the most productive at providing insight into the characteristics of people who participate most in water activities. Consequently, this section gives greatest attention to that variable while also considering the other major sources of information.

Those respondents who listed friends and relatives as a major source of information about water recreation were more likely than others to be from households that included boaters (45% to 20%), swimmers (74% to 41%), water skiers (17% to 6%), picnickers at lakes and rivers (70% to 33%) and fishers (58% to 29%). Furthermore, these same respondents were more likely than others to come from households in which at least one person participated in water recreation in Northern Ohio on weekdays (31% to 16%), weekday evenings (27% to 14%), weekends (64% to 34%), and vacations and holidays (37% to 17%). They also were more likely to come from households that included at least one person who participated in water recreation in the spring (29% to 16%), summer (78% to 48%), autumn (24% to 9%), and winter (11% to 4%).

What was true of respondents' households was also true of respondents themselves. Those who said they got most of their water recreation information from friends and relatives were more likely than others to participate in water recreation on weekdays (23% to 8%), weekday evenings (19% to 7%), weekends (42% to 23%), and vacations and holidays (30% to 15%). They were also more likely to

participate in the spring (20% to 10%), summer (56% to 29%, autumn (15% to 6%) and winter (8% to 2%).

As might be expected, given the above findings, respondents who got water recreation information from friends and relatives were more likely than others to be from households including at least one person who used Lake Erie (36% to 17%), used a private swimming pool (54% to 27%), used a lake or reservoir in Northern Ohio (50% to 23%), and used a river or stream in the region (26% to 16%).

Respondents who got information from friends and relatives were also more likely than others to be from households that owned power boats (17% to 8%), rowboats or canoes (10% to 5%), ice skates (38% to 19%), and fishing equipment (67% to 40%).

About 63% of the households of respondents who got water recreation information from friends and relatives spent more than $20 on water recreation in 1973, compared to only 31% of the other households.

What were these active people who got water recreation information from friends and relatives like? They were well educated, took vacations of conventional length, tended to be young, included more females than males, and were mostly in households with children.

About 84% of them are high school graduates, compared to 73% of the others. Furthermore, 37% of them are college graduates, compared to 29% of the others.

Among these respondents who got most of their water recreation information from friends and relatives, 72% took vacations of four days to one month in duration, compared to 56% of the others. The others were more likely to take no vacation at all or to take a vacation of more than one month.

Approximately 62% of the respondents who got information from friends and relatives were 18 to 44 years of age, compared to 40% of the others. And 56% of them were females, as against 46% of the others. About 58% of them were in households that included at least one person under 18 years of age, compared to 27% of the others.

These respondents were more likely than others to say the city (21% to 12%) or the health department (13% to 7%) was most responsible for general water quality in Northern Ohio. They were also more likely (66%) than others (50%)

to think that water pollution was "definitely" a problem in the region and to think that industrial waste being fed into water was the most serious problem (35% to 22%). The others more likely to say they did not know whether water pollution was a problem in the region (14% to 4%) and to name no serious water pollution problem in the region (52% to 34%).

When asked what kinds of water pollution they had seen in their own communities in the past year, 47% of the respondents who got information from friends and relatives listed at least one kind, compared to only 30% of the others. They most frequently named city sewage (11%) or industrial waste (9%). They were also more likely than others to think that industries (66% to 46%) and cities and counties (59% to 44%) had not done their fair share to stop polluting water in Northern Ohio. Also, 71% of them said industry was most at fault in polluting Lake Erie, compared to 61% of the other respondents.

About 82% of the respondents who said they got most of their water recreation information from friends and relatives thought air pollution in Northern Ohio was an issue of "great" or "most" importance. This was true of only 68% of the respondents who did not get much water recreation information from friends and relatives.

The respondents who got information from friends and relatives were also different from others in regard to newspaper reading. About two-thirds of them read a daily newspaper "yesterday" for 1 to 39 minutes, compared to about half of the other respondents. The others were more likely not to have read a newspaper at all or to have read for 40 minutes or longer.

The respondents who got information on water recreation in Northern Ohio from friends and relatives were less likely than others to claim an interest in the editorial page and international news in newspapers. About 47% of them said they were "interested" or "very interested" in international news, as against 56% of the others. Similarly, 36% of them as against 49% of the others said they were "interested" or "very interested" in the editorial page.

What about people who said they got most of their information about water recreation facilities and activities in Northern Ohio from newspapers?

They were more likely than others (86% to 73%)to have been registered voters and to have taken 15 days or more of vacation (41% to 27%). However, they did not differ significantly from others as to sex, age, education, or having children at home.

These newspaper-oriented respondents were more likely than others (20% to 11%) to have participated in water recreation on weekdays, and so were members of their households (25% to 16%). They were also more likely to be from households that used private swimming pools (48% to 34%) and owned power boats (16% to 9%) and fishing equipment (58% to 49%).

Furthermore, 66% of these newspaper users get their household water from a public system, compared to 54% of the others. And 60% of them watered their lawns at least twice a week in the summer, as against 37% of the others. If they had a problem of household water quality, they would be more likely than others to get in touch with the water department (24% to 15%) or the health department (17% to 12%). About 34% of them said that the agency which is responsible for general water quality in the region was doing a "good" or "very good" job, compared to 20% of the other respondents. Similarly, 36% of them said the agency which is responsible for their household water quality is doing a "good" or "very good" job, as against 26% of the others.

The people who said they got most of their water recreation information from newspapers were more likely than others (19% to 11%) to rate the issue of recreation as being of "most" importance in Northern Ohio.

Not surprisingly, these people differed from others in several respects concerning media use. They were more likely than others to have watched television "yesterday" (94% to 86%), were more likely to have listened to radio for 1 to 3 hours (29% to 21%), and were less likely to have listened for more than 3 hours (7% to 13%). They were more likely to have been subscribers to, or regular readers of, daily newspapers (92% to 81%) and to have read a newspaper "yesterday" for 40 minutes or longer (42% to 26%). Furthermore, 57% of them were "very interested" in local news in the newspaper, compared to 44% of the others. Finally, 16% of them identified at least one item concerning water which they had seen in a newspaper in the past week, while only 9% of the other respondents did so.

People who said they got most of their water recreation information from television were in several ways like those who said they got it from radio.

About 50% of the TV-oriented people said at least one member of the household used a private swimming pool in the past year, compared to 37% of the others. Similarly, 50% of the radio-oriented respondents gave this answer, as against 38% of the others. Among the TV group, 17% said they owned swimming pools, compared to 7% of the others. For the radio group, 17% owned pools, as opposed to 8% of the others.

About 94% of the TV group said that anti-pollution laws were "enforced" or "loosely enforced" against farmers and land owners in Northern Ohio. For the radio group, the comparable figure was 93%. On the other hand, those two responses were given by only 78% of the non-TV group and 80% of the non-radio group. Interestingly, the last two groups were more likely than the radio and TV groups to give the polar responses of "strictly enforced" and "unenforced."

Transportation was said to be a "most" important issue in Northern Ohio by 24% of the TV group and 23% of the radio-oriented people. The same response was given by only 12% of the non-TV group and 14% of the non-radio group.

Similarly, both the radio and TV groups thought recreation and health services were more important issues in Northern Ohio than did other respondents. Some 22% of the TV-oriented people said recreation was "most" important, and 23% of the radio buffs gave that answer. Only 12% of the non-TV group and 13% of the non-radio group did so. Concerning health service, 49% of the TV people and 46% of the radio people said it was "most" important, compared to 33% of the non-TV people and 35% of the non-radio people.

The fact that the radio-oriented respondents were like the TV-oriented ones in so many ways may best be explained by the finding that the two groups were much alike as to time spent viewing television. About 4% of each group said they watched no television "yesterday," while 26% of the TV group and 22% of the radio group said they watched for more than three hours.

However, people who were TV-oriented were not like the radio-oriented ones in some respects. Getting water recreation information from television was correlated with two variables that were not related to radio as a source.

The TV-oriented people were more likely to be registered voters and to be long-term residents of Northern Ohio than were others, and these relationships did not obtain for radio as a source. About 86% of the TV group were registered to vote, compared to 76% of the non-TV group. Also, 91% of the TV group had lived in Northern Ohio for 4 years or longer, compared to 78% of the others.

On the other hand, the use of radio as a major source of water recreation information was correlated with some variables that were not related to television as a major source.

The radio-oriented group rated the quality of its household water as "very good" more often than did others in regard to taste (42% to 29%), temperature (59% to 41%), and hardness (24% to 12%).

When asked what agency was most responsible for general water quality in Northern Ohio, the radio-oriented respondents were less likely (40%) than others (21%) to name an agency. When an agency was named, the non-radio people were more likely to say the city was responsible (18% to 12%).

When asked how good a job the agency that was responsible for water quality was doing, the radio-oriented people were more likely (39%) to say "good" or "very good" than were others (23%).

About 51% of the radio group gave no answer as to what kinds of water pollution were most serious in Northern Ohio, compared to 42% of the non-radio people. On the other hand, 31% of the non-radio people said industrial waste was a serious problem, compared to 19% of the radio listeners.

Some 58% of the people for whom radio was a major source of water recreation information were in households that spent $20 or more on water recreation in 1973, compared to 44% of the others.

The radio group also showed more interest in newspapers than did other respondents. About 29% of the radio group spent one hour or more reading a newspaper "yesterday," compared with 14% of the others. Furthermore, 60% of the radio group said they were very interested in local news in newspapers, compared to 48% of the others.

Furthermore, the radio group was more likely (24%) than others (15%) to have watched TV "yesterday" during the major news period between 4:30 p.m. and 7:00 p.m.

Finally, the people who said radio was a major source of information about water recreation facilities and activities in Northern Ohio tended to be older than others. About 39% of them were 55 or older, compared to only 21% of the others.

FINDINGS: Content Analysis of Media

Newspapers

As shown in Table 37, 633 water-related items were recorded in the analysis of the nine daily newspapers in the Lake Erie Tributary Basin of Northern Ohio. Seventy-three per cent of the items were found in the four papers from Cleveland and Toledo, the two major port cities in the study. Of these four papers, three are large-circulation papers.

Approximately three-fourths of the water-related items from all the papers were news stories, and one-fourth were photographs.

The total newshole analyzed was 416,896 column inches. Water stories and water photos filled 9,671 column inches, or 2.3% of the newshole.

The percentage of the newshole filled by water-related items in the nine papers ranged from 0.9% to 3.5%. The median percentage of water stories and photos was 1.6%.

The four Cleveland and Toledo papers had a total newshole of 259,060 column inches. Water-related items filled 8,027 column inches, or 3.1% of the newshole. The range was 1.6% to 3.5%.

In the five non-waterfront newspapers, 1.0% of the newshole was given to water-related items, or 1,634 column inches out of a total newshole of 157,836 column inches. The range was 0.9% to 1.9%.

Most of the water-related items (55%) were concerned with the Lake Erie Tributary Basin of Northern Ohio. Slightly more than one-fourth of the items were about locations in the U.S. outside Ohio. Other locales coded were: Ohio outside of the tributary basin (4%); and the world outside of the U.S. (14.4%).

In all nine papers, water-related items were predominantly local items dealing with the Lake Erie Tributary Basin of Northern Ohio. Even so, papers did differ significantly as to the distribution of items by locale (X^2=66.79, df=24, n=633, $p < .0001$). Two of the smaller, non-waterfront papers were the most locally oriented, each with 70% Northern Ohio tributary basin items. In the other papers, 42% to 62% of the items concerned this region.

As shown in Table 37, most of the items were either about recreation (35%) or disasters (22%). Only 5% of the items were concerned with water pollution. None of the other categories contained more than 9% of the items.

A large percentage of items (47%) included no attribution. Thirty-six per cent of the items named a government source, and other sources were named infrequently.

There was a significant relationship between source attributions and newspapers. (X^2=119.94, df=40, n=633, $p < .0001$). In two of the papers, more than 55% of the items cited government sources, as opposed to 26% to 40% government-source items in other papers. Almost one-fourth of the items in one small paper were attributed to business sources, whereas in all but one of the other papers, business sources were cited in fewer than 10% of the items.

The mean length of the items, including the headline, was approximately 12 column inches (close to 400 words), and the median length was about sixteen column inches (about 550 words). A majority of items (55%) were ten column inches or longer. Items were measured in column inches, and adjustments were made to equate differing column sizes in the various papers.

TABLE 37 -- Characteristics of Newspaper Items Concerning Water (n=633)

	No.	%
Type of Item		
Story	467	74
Photograph	166	26
Locale		
Lake Erie Tributary Basin, Northern Ohio	348	55
Elsewhere in Ohio	25	4
United States Outside of Ohio	169	27
Outside of United States	91	14
Subject		
Recreation	224	35
Disasters	139	22
Water supply	54	9
Water facilities	41	7
Government	33	5
Water pollution	31	5
Shipping	30	5
Aquatic life	27	4
Floor control	22	4
Hydroelectric power	5	1
Offshore minerals	4	1
Territorial water limits	3	--
Naval power	3	--
Irrigation	1	--
Other	16	3
Source		
Government agency or official	227	36
Consumer or consumer group	45	7
Business or industry	43	7
Public service organization	10	2
Two or more of the above	12	2
No attribution	296	47
Length		
2 column-inches or less	68	11
3 to 4 column-inches	86	14
5 to 9 column-inches	132	21
10 to 20 column-inches	242	38
21 column-inches or more	105	17

TABLE 37 -- Continued

	No.	%
Basis for Item		
Event	460	73
Non-event	173	27
Direction		
Socially desirable	362	57
Socially undesirable	219	35
Neutral	52	8

Almost three-fourths of the items were based on events, such as disasters, meetings, etc., rather than non-events, such as reports concerning an ongoing condition or situation.

Reports dealing with events or conditions classified as socially desirable comprised 57% of the items. Thirty-five per cent reported events or conditions considered socially undesirable, and the rest were neutral. Each of the four metropolitan, waterfront papers in Cleveland and Toledo published more items on socially desirable matters than on socially undesirable matters.

There was a significant relationship between the subject of the items and the geographic locale of the items (X^2=127.72, df=42, n=633, $p < .0001$). Forty-two per cent of the items relating to the tributary basin area of Northern Ohio were about recreation. Only 21% of the items concerning the U.S. outside Ohio were about recreation. Disasters were the subject of 40% of the items dealing with the U.S. outside of Ohio, while only 14% of the Lake Erie Tributary Basin items were about disasters.

Some 60% of the items from outside the United States included no attribution, while 40% to 45% of the items relating to the Lake Erie Tributary Basin of Northern Ohio, the rest of Ohio and the U.S. outside of Ohio gave no attribution. However, this relationship was of marginal significance (X^2=20.86, df=15, n=631, $p < .15$).

There was no significant relationship between the basis of the items (event or non-event) and the locale of the items. About 71% to 73% of the items from each locale concerned events.

There was a significant relationship between the direction (socially desirable, socially undesirable, neutral) items and their locales. Of the items dealing with the U.S. outside Ohio, 45% were socially desirable, compared to 61% to 65% of the items from all other locale categories. (X^2=34.30, df=6, n=633, $p < .0001$).

There was a significant relationship between attribution of the items and the subject matter of the items. (X^2=84.16 df=1, n=631, $p < .0001$). Whereas only 29% of all recreation items were attributed, 67% of the items on all other subjects combined gave a source. The proportion attributed for subjects other than recreation ranged from 56% (disasters) to 100% (hydroelectric power, territorial limits, naval power, and irrigation).

Items in subject categories other than recreation frequently cited government sources. While only 9% of the recreation items named a government source, one-fourth or more of the items in each of the other categories cited government sources.

Almost 70% of the items related to the government named a government source. Eighty per cent of the items dealing with flood control had government sources.

Items concerned with disasters, water facilities, shipping and aquatic life were most often either attributed to a government source or given no attribution at all.

There was a significant relationship between the basis of the items (event or non-event) and the subject ($X^2=62.15$, df=14, n=633, $p < .0001$). Naturally, most of the disaster items were events (94%) rather than ongoing conditions (non-events).

In contrast, approximately 60% of the items concerned with water supply, water facilities and water pollution pertained to events, with 40% concerning ongoing conditions.

There was a significant relationship between direction and subject. As might be expected, a high percentage (86%) of recreation items concerned events or conditions which were considered socially desirable, while a high percentage (90%) of disaster items dealth with socially undesirable events or conditions ($X^2=310.79$, df=28, n=633, $p < .0001$).

After disaster items, those concerned with water pollution and aquatic life were the most likely (45% and 41% respectively) to report socially undesirable events and conditions. Only 7% to 27% of the items in the other subject categories were about socially undesirable events or conditions.

There was a significant relationship between the basis of an item and the item's source. A high 91% of the items with a consumer source were about events, while a low 50% of the items from public service organizations reported events. Seventy-eight per cent of the government-source items were about events ($X^2=23.37$, df=5, n=631, $p < .001$).

The relationship between direction and source was also significant. Eight-one per cent of the business-source items concerned matters that were socially desirable, while only 39% of the government-source items reported events or conditions that were socially desirable. For each of the other sources, 64% to 70% of the items dealt with socially desirable events or conditions.

There was a significant relationship between direction and basis of items. Sixty-five per cent of those that concerned non-events were about conditions which were considered to be socially desirable, while such was true of only 54% of the event items. Only 19% of the non-event items dealth with socially undesirable conditions, while 40% of the event items were about socially undesirable matters (X^2=37.36, df=2, n=633, p< .001).

There was a significant relationship between length and geographic location of items. Only 43% of the items from outside the U.S. were 10 column inches or longer, compared to 52% to 57% of the items from the other three geographic regions (X^2=28.39, df=15, n=631, p< .02).

There also appeared to be a relationship between the length and subject of the items. Sixty per cent to 68% of the items concerning recreation, shipping and water facilities were 10 column inches or longer, while a low 39% of the items about water pollution were 10 column inches or longer. (However, since the chi-square table testing this relationship contained 90 cells, the sample of 633 items was not large enough to permit good probability statements.)

There was a significant relationship between length and source of items (X^2=45.46, df=25, n=629, $p<.01$). Items with a consumer source tended to be longer than items with other sources. Eighty per cent of the consumer-source items were 10 column inches or longer. Forty-three per cent to 55% of the items in the other source categories (business, government and "no attribution") were 10 column inches or longer.

There was no relationship between length and basis or between length and direction.

Television News

The total news time recorded for local and network television on the sample stations in Northern Ohio on the 28 sample days was 90 hours, 11 minutes and 40 seconds. Water news comprised two hours, 47 minutes and 30 seconds, or 3.1% of the total news time. This is an average of about one minute of water news per station per day.

As shown in Table 38, about 70% of the water news concerned the Lake Erie Tributary Basin of Northern Ohio, and 24% of the water news was related to the U.S. outside Ohio. Very few minutes of water news dealt with the other two locales: Ohio outside the tributary basin and the world outside the U.S.

Disasters were the subject of 40% of the water news. The only other subjects which claimed more than 10% of the water news were flood control (15%) and water pollution (13%).

Sixty-one per cent of the water news had no source attribution, and the government was cited in 37% of such news. No other source was named 3% of the time.

Events, as opposed to non-events or ongoing conditions, were reported in 96% of the water news.

Socially undesirable events or conditions were reported in 62% of the time given to water news, as compared with 31% given to matters that were socially desirable.

Even though network news carried by the sample stations was included in the foregoing analysis, it was also analyzed separately. Columbia Broadcasting System gave 2.9% of its news time to water matters, compared to 2.4% by the National Broadcasting Company, and 0.7% by the American Broadcasting Company.

As might be expected, most network television water news concerned the United States outside of Ohio. This was true of 82% of CBS time, 81% for NBC, and 100% for ABC.

Disasters were the subject of 64% of NBC's water news, 50% of CBS's water news and 100% of ABC's water news. Water pollution was the subject of 50% of CBS's water news

TABLE 38 -- Characteristics of Television News Coverage of Water Resources (Total time: 167 minutes, 30 seconds.)

	Minutes (rounded)	% of Time
Locale		
Lake Erie Tributary Basin of Northern Ohio	118	70
Ohio outside Lake Erie Tributary Basin	2	1
United States outside Ohio	40	24
Outside the United States	7	4
Subject		
Disasters	67	40
Flood control	25	15
Water pollution	21	13
Shipping	16	9
Water facilities	10	6
Recreation	9	5
Water supply	4	2
Government	4	2
Territorial water limits	2	1
Other	3	2
Source		
Government agency or official	62	37
Business or industry	4	2
Unattributed	102	61
Basis		
Event	161	96
Non-event	7	4
Direction		
Socially undesirable	103	62
Socially desirable	52	31
Neutral	12	7

and 20% of NBC's. Twelve per cent of NBC's water news was concerned with flood control.

Fifty per cent of NBC's water news included no attribution; 36% cited a government source; and 13% cited business sources.

Fifty-four per cent of CBS's water news included no attribution; 33% cited a government source; and 13% cited business sources.

No source was cited in ABC's three minutes of water news.

Ninety-six per cent of NBC's water news reported events, as opposed to non-events (ongoing conditions). All of the water news given by CBS and ABC was about events.

A large percentage of the water news of all three networks dealt with socially undesirable events or conditions. Seventy-eight per cent of NBC's water news, 83% of CBS's and 89% of ABC's concerned matters that were socially undesirable.

Radio News

The total radio news time for the sample stations in Northern Ohio on the 28 sample days was 287 hours, 28 minutes and 34 seconds. Four per cent of the total news, or 11 hours, 30 minutes and 43 seconds, was water news.

Eighty-one per cent of the radio water news dealt with the Lake Erie Tributary Basin of Northern Ohio, and 13% was concerned with the U.S. outside Ohio. Very little water news related to Ohio outside the tributary basin or the world outside the U.S.

The subjects most frequently reported in the radio water news were flood control (23% of the water news), disasters (22%) and domestic water supply (18%).

Fifty-one per cent of the water news cited the government as a source, and 45% included no attribution.

Ninety-one per cent of the water news concerned events, as opposed to non-events or ongoing conditions.

TABLE 39 -- Characteristics of Radio News Coverage of Water Resources (Total time: 690 minutes, 43 seconds.)

	Minutes (rounded)	% of Time
Locale		
Lake Erie Tributary Basin of Northern Ohio	561	81
Ohio outside Lake Erie Tributary Basin	21	3
United States outside Ohio	88	13
Outside the United States	21	3
Subject		
Flood control	160	23
Disasters	151	22
Water supply	127	18
Water pollution	62	9
Shipping	56	8
Recreation	40	6
Aquatic life	28	4
Government	25	4
Water facilities	21	3
Naval power	8	1
Other	12	2
Source		
Government agency or official	351	51
Consumer or consumer group	15	2
Public service organization	7	1
Business or industry	4	1
Unattributed	313	45
Basis		
Event	629	91
Non-event	61	9
Direction		
Socially undesirable	285	41
Neutral	222	32
Socially desirable	184	27

Forty-one per cent of the time given to radio water news reported socially undesirable events or conditions, as compared with 27% socially desirable and 32% neutral.

Letters to the Editor in Newspapers

Six hundred and seventy-nine letters to the editor were published in the sample newspapers of the Lake Erie Tributary Basin of Northern Ohio and only nine, or 1.3% were about water. Clearly, water resources were not a major issue with writers of letters to the newspapers.

All but one of the nine letters concerned either the Lake Erie Tributary Basin of Northern Ohio or the U.S. outside Ohio. Five of them concerned water supply matters. The letters about water were motivated (according to statements in them) by either something the writer had read in a newspaper or something he or she had learned from other people.

Government Publications

A total of 309 publications made available to the public by federal and state agencies in 1973 were analyzed. These publications (mostly pamphlets) were all that were available in the Lake Erie Tributary Basin of Northern Ohio at that time so far as the researchers could determine.

A majority (63%) of the publications dealt with Ohio outside the Tributary Basin, while 22% were directly related to the Lake Erie Tributary Basin in Northern Ohio. Fifteen per cent were publications relating to <u>all</u> of Ohio.

Most of the publications (67%) were concerned with water supply, while 15% dealt with disasters and 11% with recreation.

As would be expected, almost all of the publications (95%) cited government sources.

Non-events, or ongoing conditions, were the basis of 85% of the publications, while 15% concerned events.

About 16% of the publications were about conditions or events which were categorized as having been socially desirable, and only 4% were about socially undesirable conditions or events. Eighty of the events or conditions treated were neutral as to social desirability.

TABLE 40 -- Characteristics of Government Publications Concerning Water (n=309)

	No.	%
Locale		
Lake Erie Tributary Basin of Northern Ohio	67	22
Ohio outside Lake Erie Tributary Basin.	194	63
All of Ohio.	46	15
All of the United States	4	1
Subject		
Water supply	208	67
Disasters.	47	15
Recreation	35	11
Water pollution.	10	3
Government	2	1
Flood control.	2	1
Other.	5	2
Source		
Government agency or official.	293	95
Consumer or consumer organization.	10	3
Business or industry	4	1
Public service organization.	2	1
Basis		
Event.	47	15
Non-event.	262	85
Direction		
Neutral.	246	80
Socially undesirable	50	16
Socially desirable	13	4

Water News--Comparisons Among the Media

Newspaper water stories and photos filled 2.3% of the total newshole, while 3.1% of TV's total news time was water news, and 4% of radio's total news was about water.

A rough comparison of the amount of water information reported by the three media (newspapers, television and radio) was made by comparing the estimated number of words in each medium's water news.

This comparison of word counts excludes information provided by visuals, but it is acknowledged by the researchers that newspaper photos and TV films provide a substantial amount of information that is not matched in radio broadcasts.

Most TV stations produce two or more newscasts per day, and most radio stations produce even more newscasts. Consequently, a given news item is frequently repeated. This repetition was accounted for in the comparison. There was no repetition of water news in the newspaper stories since only one edition per day of each paper was studied.

Out of the total 9,671 column inches of water stories and photos in the nine newspapers, about 6,200 column inches (64%) were stories and about 3,500 column inches were photos and cutlines.

The newspaper stories contained an estimated 247,560 words of water news. One column inch was calculated to contain 40 words. This total covers a period of four constructed weeks (28 days). Some of the papers had issues all seven days of each week, while others had issues for six-day weeks.

Local and network TV news (six stations) gave approximately 25,125 words of water news in the 28 days. One minute of TV news was estimated to contain 150 words. The eight radio stations in the study reported an estimated 124,325 words of water news in 28 days. One minute of radio news was estimated to include 180 words. (Radio news tends to be read more rapidly because it does not have to be synchronized with visuals.)

After the totals for TV and radio were reduced to account for repetition, which is more frequent in radio than TV, it was estimated that the amount of information

about water reported by each was about the same: an average of 50 words per day per TV station, and an average of 45 words per day per radio station.

The newspapers averaged an estimated 980 words of information about water per day per paper. Compared with the averages for TV and radio, it is clear that the papers offered much more water information than did the broadcast media.

This fact is reflected by the wider range of topics and locales covered in the newspapers compared to the topics and locales getting coverage in radio and TV. The newspapers' water news included 14 specific categories, plus a small percentage of items in an "other" subject category. The water news reported by each of the broadcast media, on the other hand, covered 10 specific subjects plus a small proportion of news in the "other" category.

Close to 94% of the water news on both TV and radio was related to either the Lake Erie Tributary Basin of Northern Ohio or the U.S. outside of Ohio. In comparison, 82% of the newspapers' water news dealt with these two areas, and a third locale, the world outside the U.S., was represented in 13% of the papers' items.

Less than 5% of the water news in any of the media was related to Ohio outside the Tributary Basin.

Although most of the water news from each of the three media was related to the Lake Erie Tributary Basin of Northern Ohio, the local broadcast media gave more attention to this locale than the newspapers did. A high percentage (81% or more) of the water news on the national TV networks was about the U.S. outside Ohio.

Disasters were frequently the subject of the water news in each of the media, although television gave the greatest emphasis to disasters. Forty per cent of the TV water news was about disasters, while radio and newspapers each had 22% disaster-related water news.

Twenty-three per cent of the radio water news and 15% of TV's water news covered flood control, while only 3% of the newspaper water items did so.

Water pollution was the subject of 5% of the newspaper water news, 9% of radio water news and 13% of TV water news. A higher percentage of news related to water pollution was found in the network TV news than in local TV news.

The most frequent subject of the newspapers' water news was recreation (35%), which was rarely mentioned on radio or TV (6% and 5% of water news respectively).

Water supply was the subject of 18% of radio water news, but the subject was covered in only 2% of TV's water news and 9% of the newspaper water news.

Most of the water news in all three media either cited a government source of included no attribution.

Television had the highest percentage of water news with no attribution, 61%, as compared with 45% and 47% of the radio news and newspaper items respectively.

Almost all of the water news reported by the TV and radio stations concerned events rather than ongoing conditions or non-events. Most of the newspaper items were also about events, but 27% dealt with non-events or ongoing conditions.

Differences were found among the three media in terms of the proportion of water resources coverage given to "good news" vs. "bad news." The newspapers reported more events and conditions which were categorized as having been socially desirable (57%) than matters considered socially undesirable (35%).

Television, on the other hand, reported more news that was considered to have been socially undesirable (62%) than news considered socially desirable (31%). The largest category or radio water news was about matters considered socially undesirable (41%), while 27% was news considered socially desirable. The radio was the only medium with a substantial amount of neutral news (32%).

In all, newspapers tended to emphasize "good news," radio emphasized neutral and "bad news," while television gave most of its coverage about water resources to "bad news.

Government publications about water resources differed markedly from commercial television, radio, and newspaper coverage of water resources in that they were mostly (85%)

concerned with non-events or ongoing conditions, were not concerned essentially with the Lake Erie Tributary Basin of Northern Ohio (22%), and for the most part (80%) dealt with matters that were classified as being neutral in regard to social desirability.

SUMMARY AND DISCUSSION

Water Recreation Activities

The survey of 456 adult residents of the Lake Erie Tributary Basin of Northern Ohio revealed that swimming was the most popular water recreation activity among people in their households. Picnicking at lakes and rivers, fishing, and boating were also highly popular.

Most such recreation took place on weekends in the summer at lakes or reservoirs or in private swimming pools. Lake Erie was especially popular.

Fishing equipment was owned by a majority of households, with ice skates owned by about one-fourth of them.

A majority of households spent less than $20.00 a year on water recreation activities and equipment, with most of the others spending between $20.00 and $499.00.

Most respondents thought water recreation facilities in Northern Ohio were of about the same quality as those in other places or said they had no basis for comparison. A majority had no suggestion for improving water recreation resources in the region, but about one-fourth said improvement could be made by stopping the pollution of lakes, reservoirs and streams.

There were only minor differences between men and women in regard to water recreation activities, but age was found to be an important variable. Young respondents and households with children (under 18 years of age) were the most active. However, fishing was not related to age.

Understandably, people with good incomes and with at least a high school diploma tended to participate more in water recreation in Northern Ohio than did other people. Households with very low income (under $5,000) were by far the least likely to include people who engaged in water recreation.

Race was not correlated with water recreation in most respects, although non-whites were more likely than whites to have used public swimming pools and were less likely to have participated in water recreation during vacations and holidays.

Non-Recreational Uses of Water

A majority of households get their water from public systems, and respondents were generally satisfied with the quality of that water. However, about one-fourth of them thought the water was not soft enough.

Most households did not use much water outside the house although about two-fifths of them watered their lawns at least twice a week in the summer. About one out of eight households in the Lake Erie Tributary Basin of Northern Ohio used water for livestock.

More respondents named city agencies than any other kinds of agencies as being the ones to which they would turn if they had questions about the quality of their household water. This is understandable, since the respondents were largely urban dwellers. What may seem less comprehensible is the fact that about one-third of the respondents said there was nobody to whom they would go with such a problem or did not answer the question at all. Perhaps this is, at least in part, explained by the fact that about two-fifths of the households were not serviced by public water systems.

Comparative newcomers to Northern Ohio were the least likely to be satisfied with the taste of their household water. Apparently, satisfaction with taste is to some degree a matter of conditioning.

Although a majority of both whites and non-whites were satisfied with the quality of their household water, non-whites were less satisfied with the water pressure, temperature and chemical additives.

Attitudes

About two-thirds of the respondents did not name any agency as being responsible for the quality of water in general in Northern Ohio or the quality of their household water. When an agency was named, especially in the latter case, it was most likely to be a city.

A huge majority of respondents said water pollution was a problem in Northern Ohio at least to some extent. However, a much smaller majority named any specific kind of problem, with industrial waste and raw sewage from cities being named most often.

Only about two-fifths of the people named any water pollution problem they had seen for themselves in their own communities. Raw sewage from cities was cited most often, with citation of industrial waste and the dumping of garbage or trash into water not far behind.

About half of the adults thought industries and local governments had not done their fair share in stopping water pollution, and about one-third gave no opinion. About one-fourth said farmers and land owners had not done their fair share, with one-half giving no opinion. Coupled with these views were the opinions of a majority of respondents that pollution control laws were not well-enforced in the region.

A majority of respondents said they would not support a 5% increase in property taxes to eliminate serious water pollution in their own communities, but about two-fifths said they would do so.

About 9 out of 10 respondents thought pollution of Lake Erie was at least a moderately serious problem, with industry cited by a majority as being most responsible for that pollution. However, only one-fourth thought industry should clean up the lake, while a majority thought it should be done by government--city, state, or federal.

About 8 out of 10 respondents said that crime prevention was an issue of most importance in Northern Ohio, while about half gave such a rating to the issues of air pollution and water pollution. About one-third thought health services were such an issue.

Men and women were found to differ in some ways in their attitudes on water matters.

Men were more likely than women to say local government had not done its fair share to stop water pollution, and women were more likely than men to say anti-pollution laws were enforced in the region.

Women were more likely to support a property tax increase to stop pollution, while men were more likely to say the federal government should clean up Lake Erie.

Young adults were more likely than older ones to think that water pollution was a problem in the Basin. Young people were also most likely to regard air pollution as a serious problem in the region.

Household income was not found to be a major correlate of attitudes on water matters.

Education was observed to be related to expressing opinions on these matters, with people who did not graduate from high school being least likely to do so. Furthermore, upper-education people were the most likely to think water pollution was a problem in Northern Ohio, and that industry and local government had not done their fair share in stopping pollution.

Non-whites were more likely than whites to think that agencies responsible for water quality had done a poor job and to cite water pollution problems they had seen in their own communities. Non-whites were also more likely to think industry, government, and property owners had not done enough to stop water pollution and that pollution control laws were not well-enforced in the region. Non-whites were also more likely to say they would support a property tax increase to fight pollution in the local community.

Media Use

Friends and relatives were named most often by respondents as being important sources of water recreation information, with newspapers a close second. Newspapers were given most often as sources of non-recreation water information, with television a distant second.

Women were more likely than men to get water recreation information from friends and relatives, while men were more likely to have read a newspaper "yesterday."

Although both sexes showed high interest in local news in the newspaper, women were even more likely than men to do so. Women were also more interested in society pages and TV and movie pages, while men were more interested in sports and business pages.

Older people were more likely than young adults to rate the newspaper as a major source of water recreation information, while young people were more likely to get information from friends and relatives.

Those respondents who listed friends and relatives as being a major source of information about water recreation were more likely than others to have been participants in such activities and to have participated most often.

They were also more likely to own water recreation equipment, spend more than $20.00 a year on water recreation, be high school graduates, take vacations of four days to one month in duration, be under 45 years of age, and have children at home.

Furthermore, the people who got most of their water recreation information from friends and relatives were more likely than others to think that water pollution was a problem in Northern Ohio, that industrial waste was the most serious aspect of that problem, to have seen water pollution in their own communities, and to think that air pollution was an important issue.

People who said they got most of their information about water recreation in Northern Ohio from newspapers were more likely than others to be registered voters and to get their household water from a public system. They were also more likely than others to be interested in local news in newspapers.

In all, the data suggest that word-of-mouth communication is of great importance in the dissemination of information about water recreation in Northern Ohio. However the importance of the mass media should not be overlooked, since so many other studies have shown that the people from whom others get a lot of information tend to be heavy media users.

Content Analysis

Newspapers in the Lake Erie Tributary Basin of Northern Ohio gave about 2.3% of their newsholes to stories and photographs concerning water. The comparable figure for metropolitan, waterfront newspapers in Cleveland and Toledo was 3.1%. About 3.1% of television's news time was given to water news, as was 4% of radio's news time.

However, a comparison of the media showed that newspapers contained much more information about water than did either television or radio. Newspapers averaged an estimated 980 words of information about water per paper per day. For television, the estimate was 50 words per day per station, and for radio it was 45 words per day per station. The fact that respondents named newspapers much more often than television or radio as a major source of water news is consistent with the pattern of availability shown by this content analysis.

Newspapers covered a wider range of water topics than did radio or television. The majority of the water news of all three media concerned the Lake Erie Tributary Basin of Northern Ohio.

Newspapers gave more items to water recreation than to any other water topic, while recreation was seldom mentioned by the broadcast media. Television gave the largest share of its news time to disasters, while radio emphasized disasters and flood control.

Most of the water news of all three media was either unattributed or gave a government source.

Almost all water news of radio and television concerned specific events rather than ongoing conditions, while that was true of three-fourths of the newspaper water news. The implication is that if people who are responsible for water recreation resources want to get publicity for them, they should schedule such specific events as swimming meets, regattas, tours, open houses, contests, etc. It may be possible that in such a context, once public attention has been obtained, presentations concerning ongoing conditions can be made.

Letters to the editor in newspapers so seldom concerned water matters that they could in no way be thought of as evidence that adults in Northern Ohio were deeply concerned about water resources or their quality.

In all, newspapers tended to "good news" (socially desirable events and conditions) about water resources, while radio emphasized neutral and "bad news" (socially undesirable events and conditions), and television covered mostly "bad news."

Government publications about water resources differed greatly from the commercial media in that they mostly concerned ongoing conditions and were not localized to the Basin.

Appendix - Questionnaire

HOW YOU USE WATER RESOURCES

If the questionnaire is printed on *green* paper, the questions should be answered by a *male* over 18 years old. If the questionnaire is printed on *white* paper, the questions should be answered by a *female* over 18 years old. HOWEVER if the person of the required age and sex does not reside in your household, the questions may be answered by anyone who is over 18 years old.

HOW YOU USE WATER RESOURCES

This questionnaire is to find out how residents of Northern Ohio (Ohio within 100 miles of Lake Erie) use water resources for recreation and in their households.

R1. During the past year, how many times would you say that you or members of your household participated in each of the following types of water recreation activities in Northern Ohio? (please be sure to check one column for each type of activity)

Check one for each

WATER RECREATION	TIMES				
	0	1-7	8-14	15-21	22 or more
a. boating	☐	☐	☐	☐	☐
b. swimming	☐	☐	☐	☐	☐
c. scuba diving	☐	☐	☐	☐	☐
d. water skiing	☐	☐	☐	☐	☐
e. picnicking at a lake or river	☐	☐	☐	☐	☐
f. fishing	☐	☐	☐	☐	☐
other (please specify)					
g. _____	☐	☐	☐	☐	☐
h. _____	☐	☐	☐	☐	☐

R2. Please indicate the times that *best* describe when you, personally, and members of your household usually took part in water recreation activities in Northern Ohio in the past year.

Check all that apply

	you personally	your household
a. weekdays (Monday-Friday) other than during a vacation	☐	☐
b. during free time on weekday evenings	☐	☐
c. on weekends	☐	☐
d. on vacations/holidays	☐	☐
e. others (please specify)		
_____	☐	☐
_____	☐	☐
f. did not participate	☐	☐

R3. During which *seasons* of the past year would you say you, personally, and members of your household participated in water recreation activities?

Check all that apply

	you personally	your household
a. Spring	☐	☐
b. Summer	☐	☐
c. Autumn	☐	☐
d. Winter	☐	☐
e. did not participate	☐	☐

R4. Which of the following facilities in Northern Ohio have you or members of your household used for water *recreation* during the past year?

Check All That Apply

- a. Lake Erie ☐
- b. private pool (at home, apartment or private club) ☐
- c. public swimming pool ☐
- d. lake or reservoir ☐
- e. river or stream ☐
- f. none ☐
- g. other (please specify) _____

R5. Please indicate which items of water recreation equipment you or members of your household now own.

Check All That Apply

- a. sail boat ☐
- b. power boat (ski/fishing) ☐
- c. canoe/row boat ☐
- d. swimming pool ☐
- e. underwater diving equipment ☐
- f. ice skates ☐
- g. water skis ☐
- h. fishing equipment ☐
- i. none ☐
- j. other (please specify) _____

R6. How much do you think you and members of your household combined spent on water recreation *activities* and *equipment* during the past year?

Check one

- a. less than $20 ☐
- b. $20 — $49 ☐
- c. $50 — $99 ☐
- d. $100 — $499 ☐
- e. $500 — $999 ☐
- f. $1,000 — $4,999 ☐
- g. $5,000 or more ☐

R7 Where do you get most of your information about *water recreation facilities* in Northern Ohio?

Check All That Apply

- a. newspapers ☐
- b. radio ☐
- c. television ☐
- d. friends or relatives ☐
- e. local, state or federal agency ☐
- f. water recreation organization ☐
- g. AAA or other travel service ☐
- h. commercial resort, club or other business ☐
- i. receive no such information ☐
- j. other (please specify) _____

R8. Where do you get most of your information about *non-recreational* water uses and facilities? (water for home use, etc.)

Check All That Apply

- a. newspapers ☐
- b. radio ☐
- c. television ☐
- d. friends or relatives ☐
- e. local, state or federal agency ☐
- f. water recreation organization ☐
- g. AAA or other travel service ☐
- h. commercial resort, club or other business ☐
- i. receive no such information ☐
- j. other (please specify) _____

R9. How would you compare the water recreation facilities in Northern Ohio with others you may have visited or heard about outside of Northern Ohio?

Check one

- a. much better ☐
- b. better ☐
- c. about the same ☐
- d. poorer ☐
- e. much poorer ☐
- f. have not heard or visited ☐

R10. If there are any water recreation activities that you would like to participate in but can't because of poor water quality or inadequate facilities in Northern Ohio, what are they?

_____

_____

R11. What things, if any, do you think should be done to improve the water recreation facilities in Northern Ohio?

_____

_____

_____

In this section we'd like to find out how water is used in your household.

H1. What is the *primary* source of your household water?

Check one

a. public water system ☐
b. private well ☐
c. other (please specify) _____

H2. We would like to know how you rate the quality of your tap water on each of the following characteristics. Please rate *each* of the following characteristics on a 1 to 5 scale where 5 means very good and 1 means very poor.

WEIGHTING

5 very good
4 good
3 fair
2 poor
1 very poor

Water characteristics	Circle the number that applies for each				
a. odor	1	2	3	4	5
b. taste	1	2	3	4	5
c. color	1	2	3	4	5
d. temperature	1	2	3	4	5
e. quantity/amount	1	2	3	4	5
f. hardness	1	2	3	4	5
g. pressure	1	2	3	4	5

H3. We know that most people don't know exactly how much water their household uses on a day-to-day basis, but would you please give us your *best estimate* of how many gallons of water your household used *yesterday* for cooking, cleaning, drinking, bathing and other personal uses.

Gallons yesterday	Check one
a. 0-24	☐
b. 25-49	☐
c. 50-74	☐
d. 75-99	☐
e. 100-124	☐
f. 125-149	☐
g. 150 or more	☐

H4. Approximately how often do you or members of your household water your lawn or garden during the warm summer months (May-October)?

Check one

a. twice a day ☐
b. once a day ☐
c. every other day ☐
d. twice a week ☐
e. other (please specify) _____
f. never water a lawn or garden ☐

H5. What other uses for water outside the household (such as watering livestock, irrigation, etc.) do you or your household have. Please list these uses and give your best guess on how much water each activity takes per week.

none ☐

uses	quantity (gallons)

H6. If you had a question about household water quality, whom would you contact?

_____

_____

H7. What improvements, if any, would you like to see made in your household water supply?

_____

_____

_____

Next we'd like to find out how good a job you think government agencies are doing in providing water services in your community.

G1. Think about the quality of water in general. Please name the government agency you would say is most responsible for the water quality in Northern Ohio.

Government Agency

_____

G2. How good a job do you think this agency is doing?

Check one

a. very good ☐
b. good ☐
c. fair ☐
d. poor ☐
e. very poor ☐
f. no opinion ☐

G3. Please name the government agency or other service you would say is most responsible for maintaining the quality of the water you use in your household.

Government Agency or Service

G4. How good a job do you think this agency or service is doing?

Check one

a. very good ☐
b. good ☐
c. fair ☐
d. poor ☐
e. very poor ☐
f. no opinion ☐

G5. What complaints, if any, about the quality of your drinking water have you made to a government agency or service in the past year?

G6. Do you think water pollution is a problem in Northern Ohio?

Check one

a. yes, very definitely ☐
b. yes, to some extent ☐
c. no, not much ☐
d. no, definitely not ☐
e. don't know ☐

G7. (If yes) What kinds of water pollution do you feel are most serious?

G8. What kinds of water pollution have you happened to notice in your community in the past year, if any?

G9. Compared to most other people you know, how concerned would you say you are about water pollution?

Check one

a. much more concerned ☐
b. more concerned ☐
c. as concerned ☐
d. less concerned ☐
e. much less concerned ☐

G10. Do you feel that the major industries in Northern Ohio have done their fair share in stopping water pollution?

Check one

yes ☐
no ☐
don't know ☐

G11. As far as you know, how strictly are pollution laws enforced against industries in Northern Ohio?

Check one

a. strictly enforced ☐
b. enforced ☐
c. loosely enforced ☐
d. unenforced ☐

G12. Do you feel that the cities and counties in Northern Ohio have done their fair share in stopping water pollution?

Check one

yes ☐
no ☐
don't know ☐

G13. As far as you know, how strictly are pollution laws enforced against cities and counties in Northern Ohio?

Check one

a. strictly enforced ☐
b. enforced ☐
c. loosely enforced ☐
d. unenforced ☐

G14. Do you feel that the farmers and other individual land owners in Northern Ohio have done their fair share in stopping water pollution?

Check one

yes ☐
no ☐
don't know ☐

G15. As far as you know, how strictly are pollution laws enforced against farmers and other individual land owners in Northern Ohio?

Check one

a. strictly enforced ☐
b. enforced ☐
c. loosely enforced ☐
d. unenforced ☐

G16. If more money was needed to eliminate serious water pollution in your community, would you support a 5% increase in the property tax to cover the costs of such action?

Check one

a. definitely yes ☐
b. probably yes ☐
c. probably not ☐
d. definitely not ☐

G17. How serious do you think pollution is in Lake Erie?

Check one

a. very serious ☐
b. serious ☐
c. moderately serious ☐
d. slightly serious ☐
e. not at all ☐

G18. Who do you think is mainly to be blamed for polluting Lake Erie?

_____

_____

G19. Who should be responsible for cleaning up Lake Erie?

_____

_____

would like to know how important the following issues are to you. Please rate each of the following es on a 1 to 5 scale where 5 means the issue has the *most* importance and 1 means the issue has the *least* ortance to you.

WEIGHTING

5	of the most importance
4	of great importance
3	of average importance
2	of less importance
1	of least importance

Issue	For each circle the number that applies				
a. public safety & crime prevention 1	2	3	4	5
b. transportation 1	2	3	4	5
c. water pollution 1	2	3	4	5
d. health services 1	2	3	4	5
e. recreation 1	2	3	4	5
f. air pollution 1	2	3	4	5

Vow we would like to ask a few questions about your viewing and reading habits.

proximately how much time did you, personally, spend watching television yesterday?

Check one

- a. none ☐
- b. from one minute to a little less than an hour ☐
- c. from one to three hours ☐
- d. more than three hours ☐

ase indicate when you watched.

Check all that apply

- a. morning before 9 a.m. ☐
- b. morning between 9 a.m. and noon ☐
- c. afternoon between noon and 4:30 p.m. ☐
- d. early evening between 4:30 and 7:00 p.m. ☐
- e. Evening between 7:00 and 11:00 p.m. ☐
- f. between 11:00 p.m. and early morning ☐
- g. did not watch ☐

at programs, messages or advertisements, if any, concerning water quality, water recreation, or water have you seen on TV in the past week?

M4. Approximately how much time did you spend listening to the radio (including car radio) yesterday?

Check one

a. none ☐
b. from one minute to a little less than an hour ☐
c. from one to three hours ☐
d. more than three hours ☐

M5. Please indicate when you listened.

Check all that apply

a. morning before 9 a.m. ☐
b. morning between 9 a.m. and noon ☐
c. afternoon between noon and 4:30 p.m. ☐
d. early evening between 4:30 and 7:00 p.m. ☐
e. evening between 7:00 and 11:00 p.m. ☐
f. between 11:00 p.m. and early morning ☐
g. did not listen ☐

M6. What programs, messages or advertisements, if any, concerning water quality, water recreation, or water use have you heard on the radio during the past week?

_____

_____

M7. Which newspaper or newspapers do you subscribe to or usually read (more than ½ of the issues published per month)?

_____

_____

_____

M8. Approximately how much time did you spend reading newspapers yesterday?

Check one

a. none ☐
b. one to 19 minutes ☐
c. 20 minutes to 39 minutes ☐
d. 40 minutes to a little less than an hour ☐
e. one hour or more ☐

9. Now we would like you to rate your interest in each part of the newspaper. Please rate your interest on a 1 to 5 scale where 5 means you are *very interested* and 1 means you are *not at all interested.*

WEIGHTING

5	very interested
4	interested
3	sometimes interested
2	uninterested
1	not at all interested

Pages	For each circle the number that applies				
a. local news pages	1	2	3	4	5
b. state or national news pages	1	2	3	4	5
c. international new pages	1	2	3	4	5
d. sports pages	1	2	3	4	5
e. comic pages	1	2	3	4	5
f. classified pages	1	2	3	4	5
g. editorial pages	1	2	3	4	5
h. society news, women's pages	1	2	3	4	5
i. business pages	1	2	3	4	5
j. TV and movie pages	1	2	3	4	5
other (please specify)					
k. _____	1	2	3	4	5
l. _____	1	2	3	4	5

10. What articles, stories or advertisements, if any, concerning water quality, water recreation, or water use have you seen in the newspaper during the past week?

_____

_____

11. If you have received any information about water quality or water use with your utility bills, have you usually read it?

Check one

- yes ☐
- no ☐
- never received ☐

12. Have you noticed any billboards with water quality or water use messages in your community?

Check one

- yes ☐
- no ☐

Just a few more questions to help us analyze our data.

D1. How many people, including yourself, presently live in your household?

	Number
a. the number under 18 years of age	☐
b. 18 years and older	☐

D2. What is your relationship to the head of the household?

	Check one
a. head of household	☐
b. wife/husband	☐
c. son/daughter	☐
d. other (please specify)	☐

D3. What is the name of the school you last attended or are now attending?

D4. Please indicate the highest year you completed there.

	Check one
a. elementary school grades 1-8	☐
b. some high school	☐
c. high school graduate	☐
d. technical/vocational after high school	☐
e. some college no degree	☐
f. associate of arts degree or equivalent	☐
g. bachelor of arts degree or equivalent	☐
h. graduate study	☐

D5. Into which of these employment categories do you fall?

	Check one
a. working full-time	☐
b. working part-time	☐
c. retired	☐
d. housewife	☐
e. student, not working	☐
f. unemployed	☐
g. other (please specify)	☐

D6. If you are working (full or part-time), in what profession or line of work are you engaged?

D7. Into which category would you estimate your *total yearly household income* falls? Include salary, commissions, tips etc. from *all* jobs for *all* household members.

Check one

a. $0-$999 ☐
b. $1,000-$4,999 ☐
c. $5,000-$9,999 ☐
d. $10,000-$14,999 ☐
e. $15,000-$19,999 ☐
f. $20,000-$24,999 ☐
g. $25,000 or more ☐

D8. How would you characterize yourself politically?

Check one

a. Liberal Democrat ☐
b. Democrat ☐
c. Conservative Democrat ☐
d. Independent ☐
e. Liberal Republican ☐
f. Republican ☐
g. Conservative Republican ☐
h. other (please specify)

D9. Do you happen to be a registered voter in your county?

Check one

yes ☐
no ☐

D10. Approximately how many days of vacation did you take in the past year, not counting legal holidays?

Check one

a. none ☐
b. 3 days or less ☐
c. 4 to 7 days ☐
d. 8 to 14 days ☐
e. 15 days to one month ☐
f. more than one month ☐

D11. Which *one* of the following statements *best* describes what you did on your *most recent* vacation?

Check one

a. *stayed* at home or within 25 miles of here ☐
b. *traveled* within Ohio (more than 25 miles from home) ☐
c. *traveled* within the continental U.S. outside Ohio ☐
d. *traveled* to Canada ☐
e. *traveled* outside the continental U.S. and Canada ☐
f. never took a vacation ☐

D12. Approximately how many years have you resided in Northern Ohio?

years

D13. What is your age?

Check one

a. 18 to 24 ☐
b. 25 to 34 ☐
c. 35 to 44 ☐
d. 45 to 54 ☐
e. 55 to 64 ☐
f. 65 or older ☐

D14. What is your sex?

Check one

female ☐
male ☐

D15. Do you consider yourself a member of a minority group?

Check one

yes ☐
no ☐

(If yes) Which one?

That's it. Would you take a moment and check back through the questionnaire to make sure you've answered all the questions.

Remember we will return to pick up the questionnaire a day after we left it with you at about the same time of day. If you will not be home then, please place the questionnaire in the plastic bag we have provided and put it on the outside door of your home or apartment.

Many thanks for your time and cooperation.

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